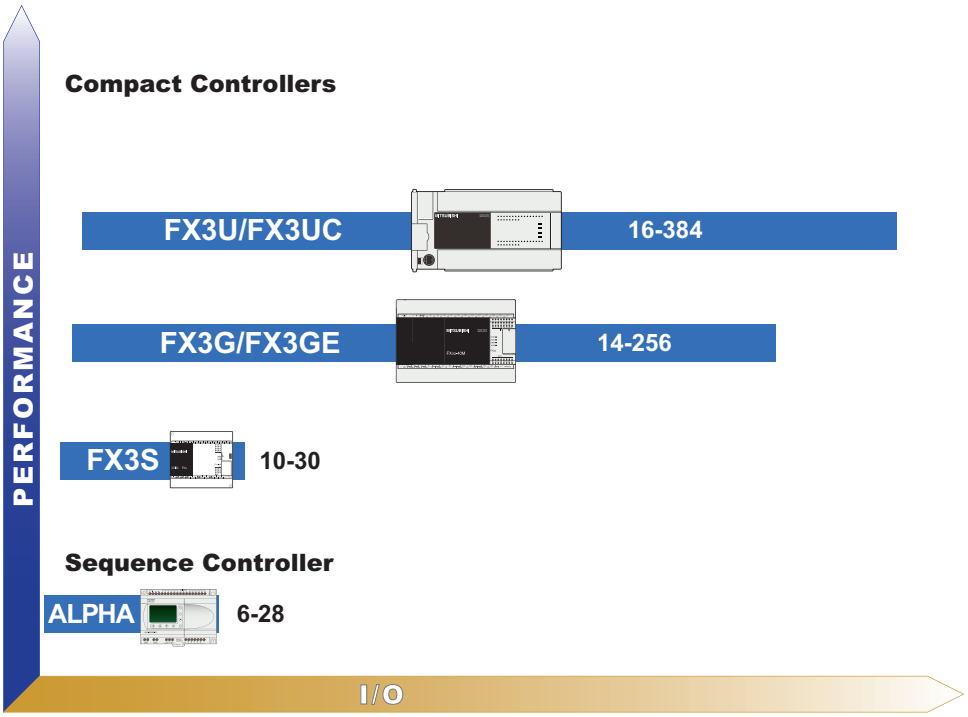
Programmable Logic Controllers
FX Family



The FX Family 6
Main Units Overview 8
Main Unit Configuration 11
Configuration Rules 15
Programming and Device Specifications 16
Environmental and Electrical Specifications 17
Main Unit Options 18
FX Input / Output Expansion Options 22
FX Analog Options 24
FX High-Speed I/O and Positioning Expansion 27
FX Communications and Networking Expansion 29
Networking Modules 29
FX Interfaces and Power Supplies 31
Accessories 32
Sequence Controllers - Alpha2 Series 34
Software 37

Stock Product: Stock product is product MEAU makes every effort to have on hand for immediate shipment. There may be instances when we are out of stock due to unexpected large requirements. All stock product will be indicated in this book by an "S" in the Stocked Item columns/rows.

Non-Stock Product: Non-stock product is product supplied on an "as-needed" basis. Standard lead times of 12 - 16 weeks apply, product is non-returnable and non-cancelable. Product listed as non-stock may change to stock product subject to increases in sales and usage. All non-stock product will be indicated in this book by a dash "-" in the Stocked Item columns/rows.

The FX Family

The FX family of PLCs is highly flexible, enabling fast and efficient configuration for the application at hand. It is the ideal choice for simple control systems requiring up to 30 I/O (FX3S), or a more complex system with up to 384 I/Os (FX3U).

Model	FX3S	FX3G	FX3GE	FX3U	FX3UC
Power Supply	100-240VAC	100-240VAC, 24VDC	100-240VAC	100-240VAC, 24VDC	24VDC
Maximum I/O	30	256*	256	384*	384*
Digital I/O	DC/Relay/Transistor	DC/Relay/Transistor	DC/Relay	AC/DC/Relay/Transistor/Triac	DC/Relay/Transistor
Cycle Period / Logical Instruction	0.21 µs	0.21 µs	0.21µs	0.065 µs	0.065 µs
Memory	4k steps	32k steps	64k steps	64k steps	64k steps

* With remote I/O.

FX Standards Compliance: All FX products are manufactured under ISO 9000 quality assurance and 14001 environmental management standards. In addition, most FX PLC products are certified by internationally recognized standards agencies. The "Ratings" section of the specifications tables lists the approvals for each product. The approval agencies are as follows:

UL, cUL: Underwriter's Laboratories and corresponding Canadian approvals
CE: Complies to the European EMC and LVD directives
DNV: Det Norske Veritas
LR: Lloyd's Register
GL: Germanischer Lloyd
ABS: American Bureau of Shipping
RINA: Registro Italiano Navale
BV: Bureau Veritas
NK: Nippon Kaiji Kyokai
KC: Korea Certification

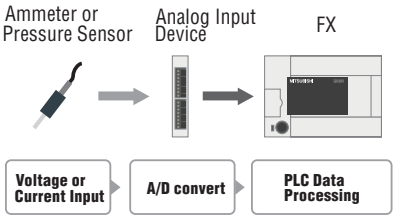
FX Control Solutions

FX PLCs have been designed to be used in a variety of industry areas with a focus on compact applications. With over 11,000,000 PLCs sold world wide, the FX PLCs have been fitted to variety of applications in a range of different industry areas. Examples of a few industries where FX PLCs are used include the timber industry, food industry, textile industry, plastics industry, printing industry, packaging industry and water processing industry.

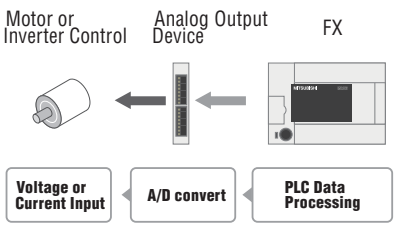
Analog Control

Expanding the FX PLC with analog inputs and outputs is required when the system needs to handle voltage or current inputs/outputs, temperature inputs, or temperature or PID control. The following expansion boards, special adapters, and special function blocks support different ranges and combinations of these features.

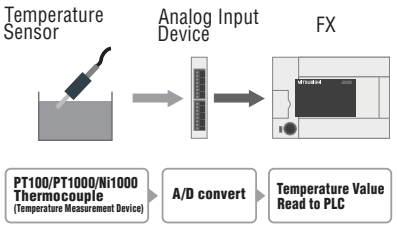
Analog Input



Analog Output



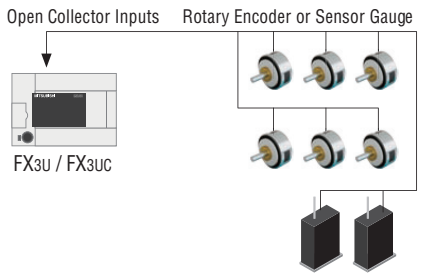
Temperature Input



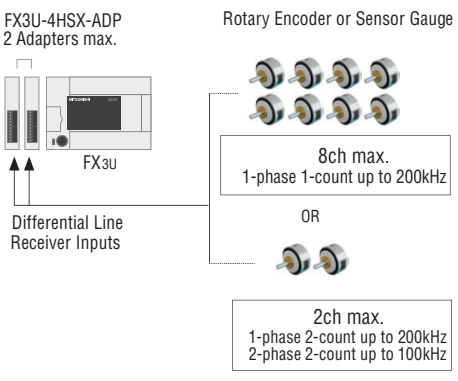
High-Speed Control

All FX Series PLCs are equipped with built-in open collector high-speed counters. These high-speed inputs are connected to external devices such as encoders and ultrasound sensors for system feedback control.

FX Integrated High-Speed Counter

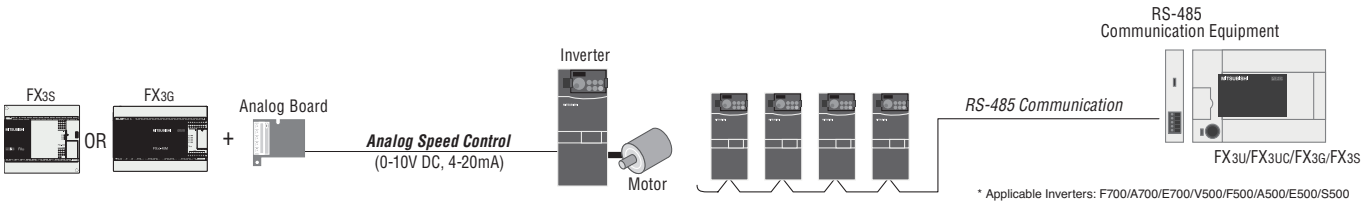


FX with High-Speed Input Adapter



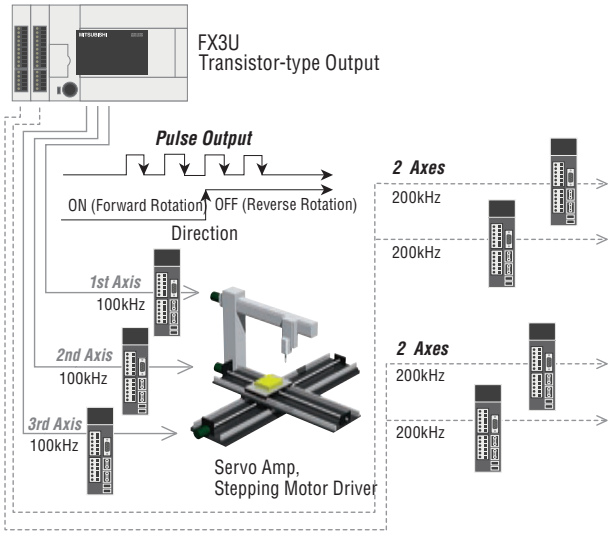
Inverter Control

Parameters and commands between the PLC and Mitsubishi Inverters can be handled through serial communication using FREQROL protocol. Another popular control method for these controllers include Analog Control.



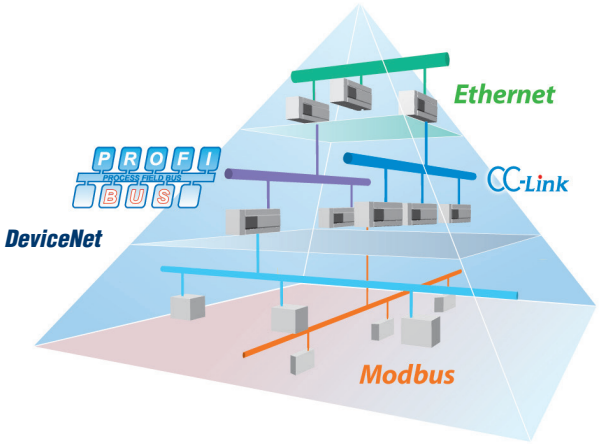
Positioning

The built-in high-speed pulse outputs on all transistor-type FX Series PLCs, are designed to satisfy simple independent-axis positioning applications. For more advanced applications, the SSCNET Special Function Block provides high performance positioning control.



Open Field Networks

Within an application, control devices can be made up from equipment from different manufacturers, however sustaining reliable communication between devices is essential. Supported networks: Ethernet, CC-Link, PROFIBUS, DeviceNet, and Modbus.



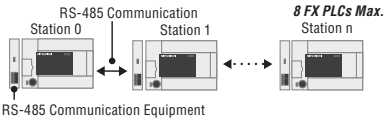
Serial Communication

Multidrop networks, non-protocol communication, and remote maintenance are just some of the many uses.

N:N Network

Communication between FX Series PLCs

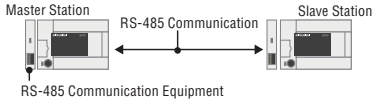
Connect up to 8 FX PLCs using N:N Networking to allow data exchange between each station.



Parallel Link

Communication between 2 FX Series PLCs of the same series

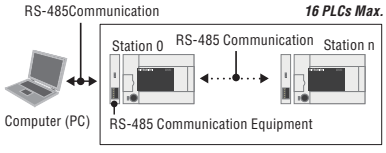
Auxiliary Relays (M) and Data Registers (D) are updated automatically between two PLCs of the same series.



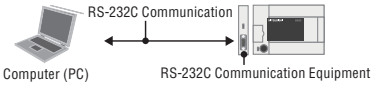
Computer Link (Dedicated Protocol)

Communication with a PC

1:N Computer to PLC Communication
The PC can communicate with a network of up to 16 FX, A, and Q PLCs.



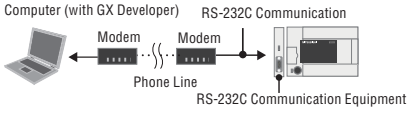
1:1 RS-232C Communication Equipment to PLC
When communicating over an RS-232C interface, the PC can communicate with one FX PLC.



Remote Maintenance

Communication with a PC

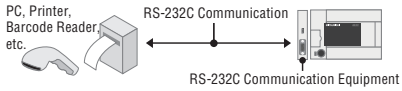
Using a modem connection, a PC can monitor/force devices and perform program upload/download to a PLC from remote locations.



Non-Protocol Communication (RS/RS2 Instructions)

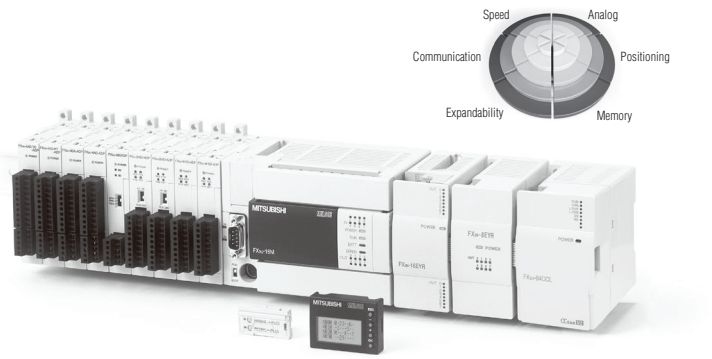
PLC communication with Printers, Barcode Readers, etc.

Serial communication is possible between a PLC and any external equipment with an RS-232C or RS-485 (RS-422) interface.



Note: The RS2 Instruction is only available for FX3U/FX3UC Series PLCs

Main Units Overview



FX3U - Top of the Line

Controllable I/O: 16 - 384 points with CC-Link or AS-i remote I/O
Main Unit I/O: 16/32/48/64/80/128 points

The FX3U is the original dual system-bus, high-speed, fully expandable compact PLC designed to seamlessly control communication, networking, analog, and positioning systems.

- 3rd generation compact PLC
- High efficiency with more speed, more performance, more memory, and new functions
- Built-in high-speed processing and positioning
- Exchangeable communication expansion boards that mount directly into the main unit (USB, RS-232C, RS-422, RS-485)
- Simultaneous memory cassette and display module mounting available
- Integrated real-time clock
- Easy programming with large instruction set and table positioning configuration
- Large programming memory
- Programming with GX Works2 or GX Works2 FX

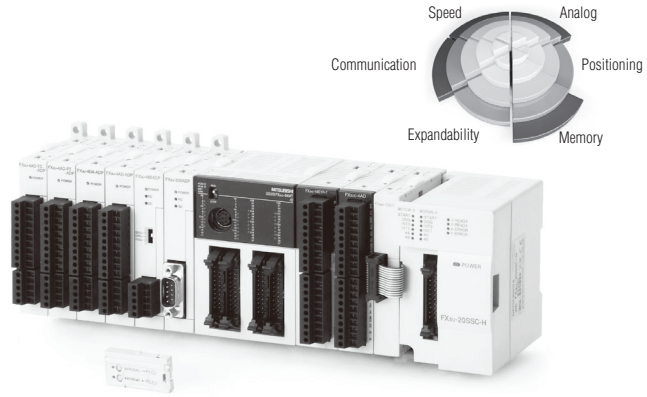
Product Details
All-in-one CPU, power supply and I/O. Includes many upgraded features from the FX2N, including high expandability using Expansion Boards and Special Adapters to add functionality.

Fast Instruction Times
Basic Instructions: 0.065 µs / instruction (Contact Instruction)
Applied Instructions: 0.642 µs / instruction (MOV Instruction)

Large Memory
64,000 steps of built-in program memory
Flash Memory Cassettes with loader functionality also available

Large Device Memory

Auxiliary Relays:	7,680 points
Timers:	512 points
Counters:	235 points
Data Registers:	8,000 points
Extension Registers:	32,768 points
Extension File Registers:	32,768 points (with optional memory cassette)



FX3UC - Slim Fit

Controllable I/O: 16 - 384 points with CC-Link or AS-i remote I/O
Main Unit I/O: 16/32/64/96 points

The FX3UC is the new ultra-compact high-speed, fully expandable PLC. Based on 24VDC power and using connector-type transistor I/O, the FX3UC is designed for space conscious and modular applications.

- 3rd generation Super-compact PLC
- Reduced size and wiring using connector-type I/O
- Built-in high-speed processing and positioning
- Ultra-compact design featuring connector-type wiring for installation space optimization
- 64k steps of internal program memory
- Integrated real-time clock
- Easy programming with large instruction set and table positioning configuration
- Programming with GX Works2 or GX Works2 FX
- Relay output

Product Details
Ultra-compact size main unit including many upgraded features from the FX2NC, including high expandability using Special Adapters to add functionality.

Fast Instruction Times
Basic Instructions: 0.065µs / instruction (Contact Instruction)
Applied Instructions: 0.642µs / instruction (MOV Instruction)

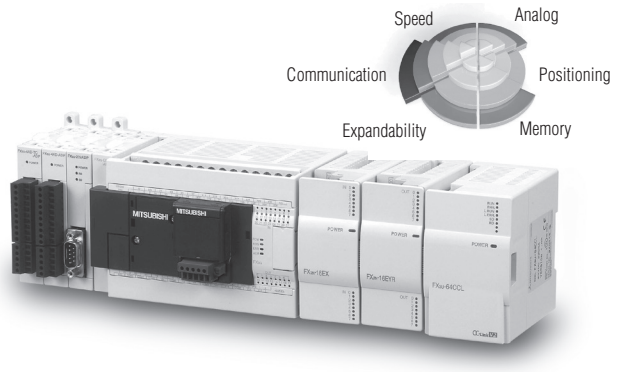
Large Memory
64,000 steps of built-in program memory
Flash Memory Cassettes with loader functionality also available

Large Device Memory

Auxiliary Relays:	7,680 points
Timers:	512 points
Counters:	235 points
Data Registers:	8,000 points
Extension Registers:	32,768 points
Extension File Registers:	32,768 points (with optional memory cassette)

FX3G - Customized Control

Controllable I/O: 14 - 256 points (with CC-Link remote I/O)
Main Unit I/O: 12/24/40/60 points



The FX3G is an introductory compact PLC that is latest addition to the FX3 series. With control of directly connected and networked I/O, connectivity to the FX3 series ADP bus and new expansion boards makes the FX3G ideal for simple yet performance critical applications.

- 3rd Generation Compact PLC
- Highly flexible
- Dual bus architecture- 32k steps of internal program memory
- Integrated real-time clock
- Easy programming with large instruction set and table positioning configuration
- Built-in USB port for the programming communication function to enable high-speed communication at 12Mbps
- Two built-in variable analog potentiometers available for adjusting the timer set time
- Programming with GX Works2 or GX Works2 FX

Product Details
All in one CPU, power supply and I/O. Includes many upgraded features from the FX1N. Especially usage of the FX3 series ADP bus system and new expansion boards (BD).

Instruction Times
Basic Instructions: 0.21µs / instruction (Contact Instruction)

Large Memory
32,000 steps of built-in program memory. EEPROM memory cassette with loader function is available.

Large Device Memory

Auxiliary Relays:	7,680 points
Timers:	320 points
Counters:	235 points
Data Registers:	8,000 points
Extension Registers:	24,000 points
Extension File Registers:	24,000 points

FX3GE - All-in-one control

Controllable I/O: 24 - 256 points (with CC-Link remote I/O)
Main Unit I/O: 24/40 points

The FX3GE combines the powerful FX3G CPU with built-in Ethernet communications and analog I/O to provide a cost-effective micro PLC that can meet the needs of a wide variety of applications right out of the box.

- 3rd Generation Compact PLC
- Highly flexible
- Embedded Ethernet communications port
- Embedded analog I/O (2 inputs, 1 output)
- Dual bus architecture- 32k steps of internal program memory
- Integrated real-time clock
- Easy programming with large instruction set and table positioning configuration
- Built-in USB port for the programming communication function to enable high-speed communication at 12Mbps
- Two built-in variable analog potentiometers available for adjusting the timer set time
- Programming with GX Works2 or GX Works2 FX

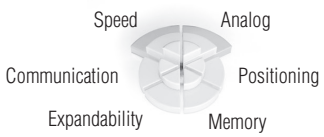
Product Details
All in one CPU, power supply and I/O. Also includes an Ethernet communications port and analog inputs and outputs. Can use all the same expansion options as FX3G.

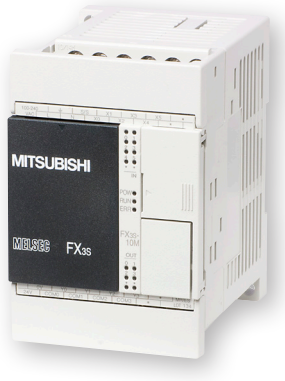
Fast Instruction Times
Basic Instructions: 0.21µs / instruction (Contact Instruction)

Large Memory
32,000 steps of built-in program memory. EEPROM memory cassette with loader function is available.

Large Device Memory

Auxiliary Relays:	7,680 points
Timers:	320 points
Counters:	235 points
Data Registers:	8,000 points
Extension Registers:	24,000 points
Extension File Registers:	24,000 points





FX3S - Keeping it Simple
Controllable I/O: 10 - 30 points
Main Unit I/O: 10/14/20/30 points

The FX3S is the fit-and-forget PLC solution for space and cost conscious applications requiring up to 30 I/O. This minimum-expandability, battery-less maintenance free controller is perfect for handling straightforward processes and can be hidden away in locations without regular maintenance activities.

- 3rd Generation Basic Compact PLC
- High performance with minimal size
- Integrated power supply (AC powered)
- Maintenance-free EEPROM memory
- Ample memory capacity (4000 steps) and device ranges
- Built-in USB port for the programming communication function to enable high-speed communication at 12Mbps
- Built-in positioning control
- Integrated real-time clock
- Increased functionality using Expansion Boards and Special Adapters
- Programming with GX Works2 or GX Works2 FX

Product Details
All-in-one CPU, power supply and I/O. Expansion options includes adapter and expansion boards for communication, analog control, or temperature input.

Fast Instruction Times
Basic Instructions: 0.21µs / instruction (Contact Instruction)
Applied Instructions: 0.5µs / instruction (MOV Instruction)

Large Memory
4,000 steps of built-in program memory. No battery. No maintenance.

Large Device Memory
Auxiliary Relays:	1,536 points
Timers:	138 points
Counters:	88 points
Data Registers:	3,000 points

Main Unit Configuration

FX3U

9 CF Card ADP | 5 Analog ADP | 4 Communication ADP | 3 High-Speed Output ADP / High-Speed Input ADP | 2 Board | 1 FX3U Main Unit | 6 FX2N I/O Expansions | 7 FX3U/FX 2N Special Function Blocks | 8 FX3U Power Supply Unit

Expansion Boards


FX3U-422-BD

Communication
FX3U-232-BD
FX3U-422-BD
FX3U-485-BD
FX3U-USB-BD

OR

Interface Board
FX3U-CNV-BD

Analog Potentiometer
FX3U-8AV-BD

2

Special Adapters

Communication
FX3U-232ADP-MB
FX3U-485ADP-MB
FX3U-ENET-ADP

4

9


FX3U-CF-ADP

Data Storage
FX3U-CF-ADP

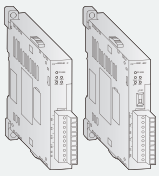
5


FX3U-4AD-ADP FX3U-4AD-PNK-ADP

Analog
FX3U-4AD-ADP
FX3U-4DA-ADP
FX3U-3A-ADP

Temperature
FX3U-4AD-PT-ADP
FX3U-4AD-TC-ADP
FX3U-4AD-PTW-ADP
FX3U-4AD-PNK-ADP

3

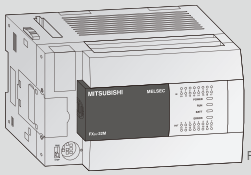

FX3U-4HSX-ADP FX3U-2HSY-ADP

High Speed Counter
FX3U-4HSX-ADP

Positioning
FX3U-2HSY-ADP

FX3U Main Units

1

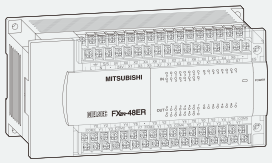

FX3U-32MR

■ FX3U Main Units 16-128 I/O

FX3U-16MR/ES	AC D R	FX3U-48MR/ES	AC D R	FX3U-80MR/ES	AC D R
FX3U-16MT/ES	AC D T1	FX3U-48MT/ES	AC D T1	FX3U-80MT/ES	AC D T1
FX3U-16MT/ESS	AC D T2	FX3U-48MT/ESS	AC D T2	FX3U-80MT/ESS	AC D T2
FX3U-16MR/DS	DC D R	FX3U-48MR/DS	DC D R	FX3U-80MR/DS	DC D R
FX3U-16MT/DS	DC D T1	FX3U-48MT/DS	DC D T1	FX3U-80MT/DS	DC D T1
FX3U-16MT/DSS	DC D T2	FX3U-48MT/DSS	DC D T2	FX3U-80MT/DSS	DC D T2
FX3U-32MR/ES	AC D R	FX3U-64MR/ES	AC D R	FX3U-128MR/ES	AC D R
FX3U-32MT/ES	AC D T1	FX3U-64MT/ES	AC D T1	FX3U-128MT/ES	AC D T1
FX3U-32MT/ESS	AC D T2	FX3U-64MT/ESS	AC D T2	FX3U-128MT/ESS	AC D T2
FX3U-32MR/DS	DC D R	FX3U-64MR/DS	DC D R		
FX3U-32MT/DS	DC D T1	**FX3U-64MT/DS**	DC D T1		
FX3U-32MT/DSS	DC D T2	**FX3U-64MT/DSS**	DC D T2		
FX3U-32MR/UA1	AC E R	FX3U-64MR/UA1	AC E R		
FX3U-32MS/ES	AC D TR	FX3U-64MS/ES	AC D TR		

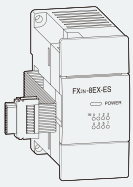
AC AC Power supply
DC DC Power supply
R Relay output
T1 Transistor (sink)
E AC Input
D DC Input (sink/source)
TR Triac output
T2 Transistor (source)

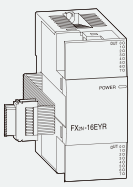
Special Function Modules


FX2N-48ER

Powered Extension Units

Input/Output Extension Units
FX2N-32ER-ES/UL
FX2N-32ET-ESS/UL
FX2N-48ER-DS
FX2N-48ER-ES/UL
FX2N-48ER-UA1/UL
FX2N-48ET-DSS
FX2N-48ET-ESS/UL


FX2N-8EX


FX2N-16EYR

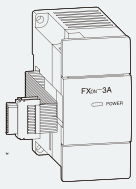
Unpowered Extension Blocks

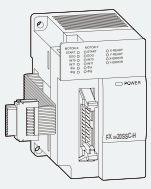
6

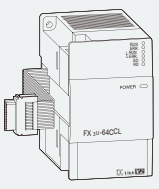
Input Extension Blocks
FX2N-8EX-ES/UL
FX2N-8EX-UA1/UL
FX2N-16EX-ES/UL

Output Extension Blocks
FX2N-8EYR-ES/UL
FX2N-8EYT-ESS/UL
FX2N-8EYR-S-ES/UL
FX2N-16EYR-ES/UL
FX2N-16EYT-ESS/UL
FX2N-16EYS

Input/Output Extension Blocks
FX2N-8ER-ES/UL


FX0N-3A


FX3U-20SSC-H


FX3U-64CCL

7

Analog
FX2N-2AD
FX3U-4AD
FX2N-2DA
FX3U-4DA
FX2N-5A
FX2N-8AD

Positioning
FX3U-1PG
FX2N-10PG
FX3U-20SSC-H
FX2N-1RM-E-SET

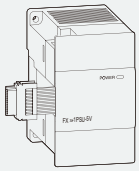
Network
FX2N-32CCL
FX3U-16CCL-M
FX3U-64CCL
FX3U-ENET
FX3U-32DP
FX3U-64DP-M

Temperature
FX2N-2L
FX2N-4AD-TC
FX2N-4AD-PT
FX3U-4LC

High Speed Counter
FX2N-1HC
FX3U-2HC

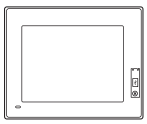
Communication
FX2N-232IF

8


FX3U-1PSU-5V

Power Supply Unit
FX3U-1PSU-5V

Optional Equipment and Software

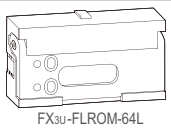


■ GOT
GOT1000
GT10/GT11/GT12/GT14/GT16

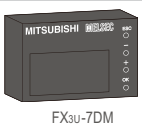
■ Interface Converter
FX-USB-AW
FX-232AWC-H

■ Software
GX Developer
GX Works2
GX Works2 FX

Accessories

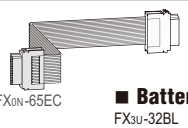

FX3U-FLROM-64L

■ Memory Cassettes
FX3U-FLROM-64
FX3U-FLROM-16
FX3U-FLROM-64L
FX3U-FLROM-1M


FX3U-7DM

■ Display Modules
FX3U-7DM

■ Display Module Holder
FX3U-7DM-HLD


FX0N-65EC

■ Battery
FX3U-32BL

■ Extension Cables
FX0N-30EC(30cm)
FX0N-65EC(65cm)

■ PLC Bus Connector
FX2N-CNV-BC

FX3UC

9 CF Card ADP | 3 Analog ADP | 2 Communication ADP | 1 FX 3UC Main Unit | 4 FX 2NC I/O Expansions | 5 FX 3UC /FX 2NC Special Function Blocks | 6 FX 3UC -1PS-5V or FX 2NC -CNV-IF | 7 FX 2N Unpowered I/O Expansions | 8 FX 3UC /FX 2N Special Function Blocks

Special Adapters

3

FX3U-4AD-ADP

FX3U-4AD-PNK-ADP

Analog
FX3U-4AD-ADP
FX3U-4DA-ADP
FX3U-3A-ADP

Temperature
FX3U-4AD-PT-ADP
FX3U-4AD-TC-ADP
FX3U-4AD-PTW-ADP
FX3U-4AD-PNK-ADP

2

FX3U-232ADP-MB

FX3U-485ADP-MB

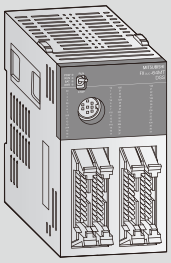
Communication
FX3U-232ADP-MB
FX3U-485ADP-MB
FX3U-ENET-ADP

9

Data Storage
FX3U-CF-ADP

FX3UC Main Units

1



FX3UC-64MT/DSS

■ FX3UC Main Units 16-96 I/O

FX3UC-16MT/D*	DC	D1	T1
FX3UC-16MT/DSS	DC	D2	T2
FX3UC-16MR/DS-T	DC	D2	R
FX3UC-32MT/D*	DC	D1	T1
FX3UC-32MT/DSS	DC	D2	T2
FX3UC-64MT/D*	DC	D1	T1
FX3UC-64MT/DSS	DC	D2	T2
FX3UC-96MT/D*	DC	D1	T1
FX3UC-96MT/DSS	DC	D2	T2

DC DC Power supply
D1 DC Input (sink)
D2 DC Input (sink/source)
T1 Transistor Output (sink)
T2 Transistor Output (source)
R Relay

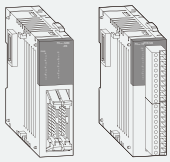
* Refer to the HARDWARE MANUAL for system configuration.

Special Function Modules*

* The special function Modules of FX3UC-**MT/DSS.

■ I/O Extension Blocks

4



FX2NC-32EX FX2NC-16EYR-T

Input Extension Blocks
FX2NC-16EX-T-DS
FX2NC-16EX-DS
FX2NC-32EX-DS

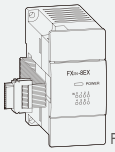
Output Extension Blocks
FX2NC-16EYR-T-DS
FX2NC-16EYT-DSS
FX2NC-32EYT-DSS

6

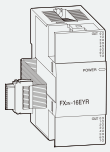
FX3UC-1PS-5V

Power Supply Unit
FX3UC-1PS-5V
OR
Interface Converter
FX2NC-CNV-IF

Unpowered Extension Blocks



FX2N-8EX



FX2N-16EYR

Input/Output Extension Blocks
FX2N-8ER-ES/UL

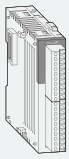
7

Input Extension Blocks
FX2N-8EX-ES/UL
FX2N-8EX-UA1/UL
FX2N-16EX-ES/UL

Output Extension Blocks
FX2N-8EYR-ES/UL
FX2N-8EYT-ESS/UL
FX2N-8EYR-S-ES/UL
FX2N-16EYR-ES/UL
FX2N-16EYT-ESS/UL
FX2N-16EYS

■ Special Function Blocks

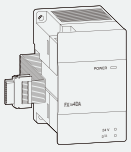
5



FX3UC-4AD

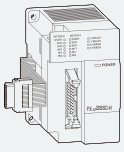
Analog
FX3UC-4AD
FX2NC-4DA

High Speed Counter
FX2NC-1HC

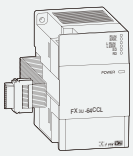


FX3U-4DA

FX 2N-2AD



FX 3U-20SSC-H



FX 3U-64CCL

Analog
FX2N-2AD FX3U-4DA
FX3U-4AD FX2N-5A
FX2N-2DA FX2N-8AD

Positioning
FX3U-1PG FX2N-1RM-E-SET
FX2N-10PG FX3U-20SSC-H

8

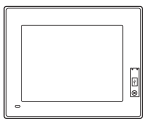
Network
FX2N-32CCL FX3U-32DP
FX3U-16CCL-M FX3U-64DP-M
FX3U-64CCL FX3U-ENET

Temperature
FX2N-2LC FX3U-4LC
FX2N-4AD-TC
FX2N-4AD-PT

High Speed Counter
FX2N-1HC FX3U-2HC

Communication
FX2N-232IF

Optional Equipment and Software

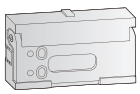


■ GOT
GOT1000
GT10/GT11/GT12/GT14/GT16

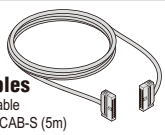
■ Interface Converter
FX-USB-AW
FX-232AWC-H

■ Software
GX Developer
GX Works2
GX Works2 FX

Accessories



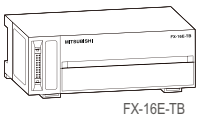
■ Memory Cassettes
FX3U-FLROM-64
FX3U-FLROM-16
FX3U-FLROM-64L
FX3U-FLROM-1M



■ I/O Cables
General I/O cable
FX-16E-500CAB-S (5m)

■ Connecting to Terminal Block
FX-16E-150CAB (1.5m) FX-16E-150CAB-R (1.5m)
FX-16E-300CAB (3m) FX-16E-300CAB-R (3m)
FX-16E-500CAB (5m) FX-16E-500CAB-R (5m)

■ Connector Parts
FX2C-I/O-CON
FX2C-I/O-CON-S
FX2C-I/O-CON-SA

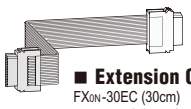


FX-16E-TB

■ Terminal Blocks
FX-16E-TB/UL
FX-16EYR-ES-TB/UL
FX-16EYS-ES-TB/UL
FX-16EYT-ESS-TB/UL
FX-32E-TB/UL

■ Input Switches
FX2C-16SW-C
FX2C-16SW-TB

■ Battery
FX3U-32BL



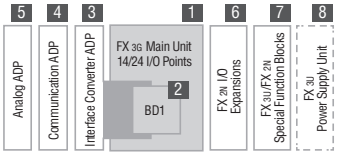
FX0N-65EC

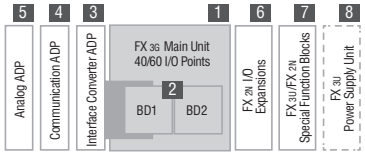
■ Extension Cables
FX0N-30EC (30cm)
FX0N-65EC (65cm)

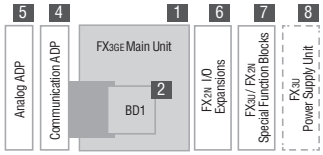
■ PLC Bus Connector
FX2N-CNV-BC

■ Power Supply Cables
FX2NC-100MPCB (1m)
FX2NC-100BPCB (1m)
FX2NC-10BPCB1 (0.1m)

FX3G







Expansion Boards


FX3G-232-BD

Communication
FX3G-232-BD
FX3G-422-BD
FX3G-485-BD
FX3G-485-BD-RJ*
*Available 12/2013

Analog
FX3G-2AD-BD
FX3G-1DA-BD

Analog Setpoint
FX3G-8AV-BD

2

Special Adapters

5


FX3U-4AD-ADP

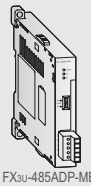

FX3U-4AD-PNK-ADP

Analog
FX3U-4AD-ADP
FX3U-4DA-ADP
FX3U-3A-ADP

Temperature
FX3U-4AD-PT-ADP
FX3U-4AD-TC-ADP
FX3U-4AD-PTW-ADP
FX3U-4AD-PNK-ADP

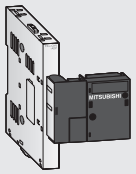
4


FX3U-232ADP-MB


FX3U-485ADP-MB

Communication
FX3U-232ADP-MB
FX3U-485ADP-MB
FX3U-ENET-ADP*
* Not available for FX3GE main units

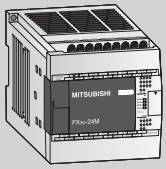
3

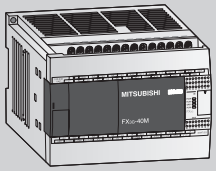


Interface Converter
FX3G-CNV-ADP

FX3G Main Units

1


FX3G-24MT/ES


FX3G-40MT/ES

FX3G Main Units 14-60 I/O

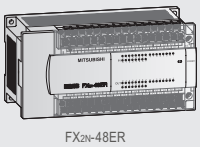
FX3G-14MR/ES	AC D R	FX3G-40MR/ES	AC D R
FX3G-14MT/ES	AC D T1	FX3GE-40MR/ES	AC D R
FX3G-14MT/ESS	AC D T2	FX3G-40MT/ES	AC D T1
FX3G-14MR/DS	DC D R	FX3G-40MT/ESS	AC D T2
FX3G-14MT/DS	DC D T1	FX3G-40MR/DS	DC D R
FX3G-14MT/DSS	DC D T2	FX3G-40MT/DS	DC D T1
FX3G-24MR/ES	AC D R	FX3G-40MT/DSS	DC D T2
FX3GE-24MR/ES	AC D R	FX3G-60MR/ES	AC D R
		FX3G-60MT/ES	AC D T1
		FX3G-60MT/ESS	AC D T2
		FX3G-60MR/DS	DC D R
		FX3G-60MT/DS	DC D T1
		FX3G-60MT/DSS	DC D T2

AC AC Power supply
DC DC Power supply
D DC Input(sink/source)
R Relay output
T1 Transistor(sink)
T2 Transistor(source)

Special Function Modules

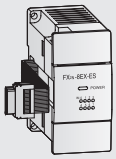
I/O Extension Blocks

6


FX2N-48ER

Powered Extension Units

Input/Output Extension Units
FX2N-32ER-ES/UL
FX2N-32ET-ESS/UL
FX2N-48ER-DS
FX2N-48ER-ES/UL
FX2N-48ER-UA1/UL
FX2N-48ET-DSS
FX2N-48ET-ESS/UL


FX2N-8EX

Unpowered Extension Blocks

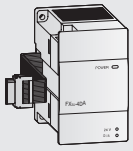
Input Extension Blocks
FX2N-8EX-ES/UL
FX2N-8EX-UA1/UL
FX2N-16EX-ES/UL

Output Extension Blocks
FX2N-8EYR-ES/UL
FX2N-8EYT-ESS/UL
FX2N-8EYR-S-ES/UL
FX2N-16EYR-ES/UL
FX2N-16EYT-ESS/UL
FX2N-16EYS

Input/Output Extension Blocks
FX2N-8ER-ES/UL

Special Function Blocks

7

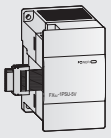

FX3U-4DA

Analog
FX2N-2AD
FX3U-4AD
FX2N-2DA
FX3U-4DA
FX2N-5A
FX2N-8AD

Temperature
FX2N-2LC
FX2N-4AD-TC
FX2N-4AD-PT
FX3U-4LC

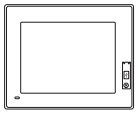
Network
FX3U-16CCL-M
FX2N-32CCL
FX3U-64CCL
FX3U-ENET
FX3U-32DP

8


FX3U-1PSU-5V

Power Supply Unit
FX3U-1PSU-5V

Optional Equipment and Software


GT14

GOT
GOT1000
(GT10/GT11/GT12/GT14/GT16)

Interface Converter
FX-232AWC-H

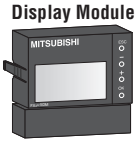
Software
GX Developer
GX Works2
GX Works2 FX

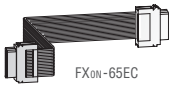
Accessories

Memory Cassette


FX3G-EEPROM-32L

Display Module


FX3G-5DM

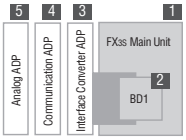

FX0N-65EC

Extension Cables
FX0N-30EC(30cm)
FX0N-65EC(65cm)

PLC Bus Connector
FX2N-CNV-BC

Battery
FX3U-32BL

FX3S



Expansion Boards

FX3G-232-BD

Communication
FX3G-232-BD
FX3G-422-BD
FX3G-485-BD
FX3G-485-BD-RJ*
*Available 12/2013

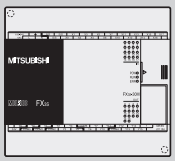
Analog
FX3G-2AD-BD
FX3G-1DA-BD

Analog Setpoint
FX3G-8AV-BD

2

FX3G Main Units

1



FX3S-10MR/ES

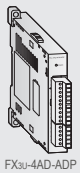
FX3G Main Units 14-60 I/O

FX3S-10MR/ES	AC D R	FX3S-20MR/ES	AC D R
FX3S-10MT/ES	AC D T1	FX3S-20MT/ES	AC D T1
FX3S-10MT/ESS	AC D T2	FX3S-20MT/ESS	AC D T2
FX3S-14MR/ES	AC D R	FX3S-30MR/ES	AC D R
FX3S-14MT/ES	AC D T1	FX3S-30MT/ES	AC D T1
FX3S-14MT/ESS	AC D T2	FX3S-30MT/ESS	AC D T2

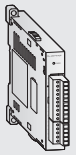
AC AC Power Supply
D DC Input (sink/source)
R Relay Output
T1 Transistor (sink)
T2 Transistor (source)

Special Adapters

5



FX3U-4AD-ADP



FX3U-4AD-PNK-ADP

Analog
FX3U-4AD-ADP
FX3U-4DA-ADP
FX3U-3A-ADP

Temperature
FX3U-4AD-PT-ADP
FX3U-4AD-TC-ADP
FX3U-4AD-PTW-ADP
FX3U-4AD-PNK-ADP

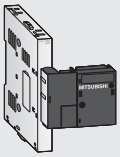
4

FX3U-232ADP-MB

FX3U-485ADP-MB

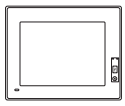
Communication
FX3U-232ADP-MB
FX3U-485ADP-MB
FX3U-ENET-ADP

3



Interface Converter
FX3S-CNV-ADP

Optional Equipment and Software



GT14

GOT
GOT1000
(GT10/GT11/GT12/GT14/GT16)

Interface Converter
FX-232AWC-H

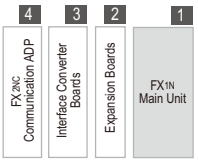
Software
GX Developer
GX Works2
GX Works2 FX

Accessories

Memory Cassette

FX3G-EEPROM-32L

FX1S



Special Adapters

4

FX2NC-232ADP

FX2NC-485ADP

FX2NC-ENET-ADP

Communication Adapters
FX2NC-232ADP
FX2NC-485ADP
FX2NC-ENET-ADP

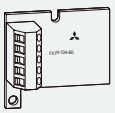
Expansion Boards

2

FX1N-2AD-BD

Communication Boards
FX1N-232-BD
FX1N-485-BD
FX1N-422-BD

Analog Boards
FX1N-2AD-BD*
FX1N-1DA-BD*
FX1N-8AV-BD



FX1N-1DA-BD

Extension Boards
FX1N-4EX-BD*
FX1N-2EYT-BD*

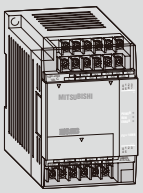
* Ver.2.00 or later

3

Interface Board
FX1N-CNV-BD

FX1S Main Units

1



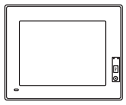
FX1S-14MR

■ FX1S Main Units 10-30 I/O

FX1S-10MR-ES/UL	AC D R	FX1S-30MR-ES/UL	AC D R
FX1S-10MT-ESS/UL	AC D T2	FX1S-30MT-ESS/UL	AC D T2
FX1S-10MR-DS	DC D R	FX1S-30MR-DS	AC D R
FX1S-10MT-DSS	DC D T2	FX1S-30MT-DSS	AC D T2
FX1S-10MT	AC D1 T1	FX1S-30MT	AC D1 T1
FX1S-14MR-ES/UL	AC D R		
FX1S-14MT-ESS/UL	AC D T2		
FX1S-14MR-DS	DC D R		
FX1S-14MT-DSS	DC D T2		
FX1S-14MT	AC D1 T1		
FX1S-20MR-ES/UL	AC D R		
FX1S-20MT-ESS/UL	AC D T2		
FX1S-20MR-DS	DC D R		
FX1S-20MT-DSS	DC D T2		
FX1S-20MT	AC D1 T1		

AC AC Power supply
DC DC Power supply
D DC Input(sink/source)
D1 DC Input (sink)
R Relay output
T1 Transistor(sink)
T2 Transistor(source)

Optional Equipment and Software

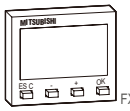


■ GOT
GOT1000
(GT10/GT11/GT12/GT14/GT16)

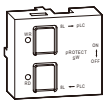
■ Interface Converters
FX-USB-AW
FX-232AWC-H

■ Software
GX Developer
GX Works2 FX

Accessories



FX1N-5DM



FX1N-EEPROM-8L

■ Display Modules
FX1N-5DM
FX-10DM-E

■ Memory Cassette
FX1N-EEPROM-8L

Configuration Rules

CAUTION: For full configuration details please refer to the respective hardware manuals.

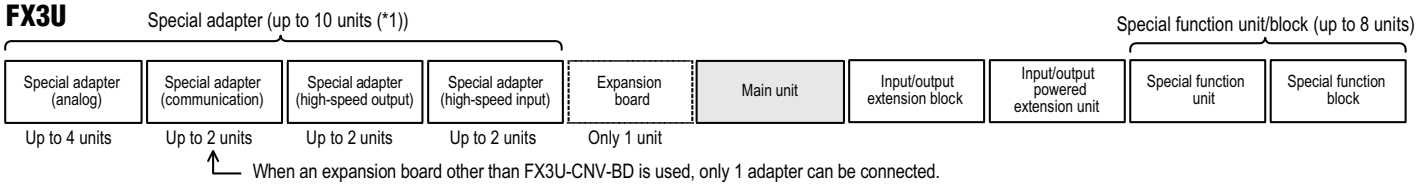
1. Number of input/output points

FX3U/FX3UC: The total number of combined input/output points and remote I/O points on CC-Link or AS-i system must be 384 points or less on the whole system, where the number of local I/O points and remote I/O points cannot exceed 256 points.

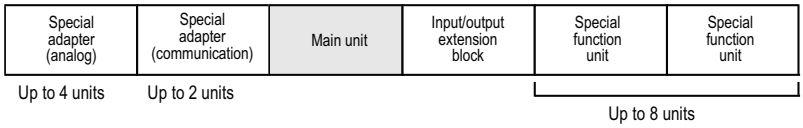
FX3G: The total number of combined input/output points and remote I/O points on CC-Link must be 256 points or less on the whole system, where the maximum number of local I/O points and remote I/O points cannot exceed 128 points.

2. Number of connected special extension devices

FX3U

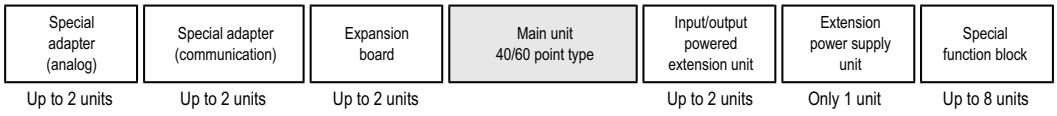


FX3UC

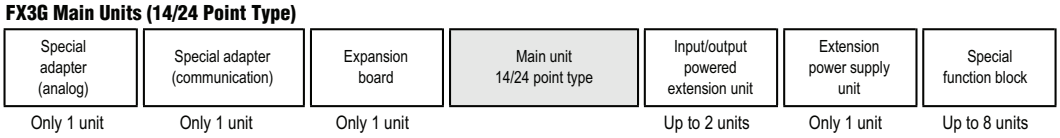


FX3G

FX3G Main Units (40/60 Point Type)

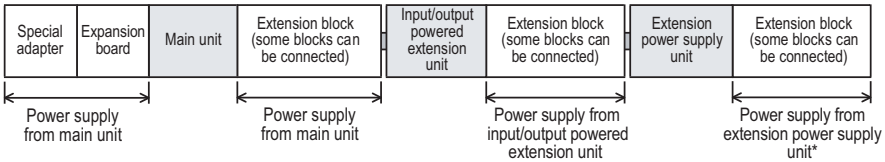


FX3G Main Units (14/24 Point Type)



3. Calculation of current consumption

FX3U / FX3UC / FX3G: The power is supplied to each connected device from the built-in power supply of the main unit, the input / output powered extension unit or the extension power supply unit. There are three types of built-in power supplies; 24VDC service power, 5VDC power and internal 24VDC power. The power consumed varies depending on the type of product added.



Note: FX3S/FX1S controllers can generally be considered as standalone controllers so no explicit configuration requirements exist. However, for configuration of adapters, boards, and memory cassettes, etc. please refer to the FX3S/FX1S hardware manual.

Programming and Device Specifications

Model Number	FX1S	FX3S	FX3G/FX3GE	FX3U/FX3UC
Programming				
I/O Points	30 (+4 optional)	30	256 total (combined local and CC-Link remote I/O)	384 total (combined local and CC-Link remote I/O)
Address Range	Max. 30 direct addressing	Max. 30 direct addressing	Max. 128 direct addressing and Max. 128 remote I/O	Max. 256 direct addressing and Max. 256 remote I/O
Program Memory	2,000 steps EEPROM	4,000 steps EEPROM	32,000 steps EEPROM (internal), exchangeable EEPROM memory cassette	64,000 steps RAM (internal), exchangeable FLROM memory cassette
Instruction Time	0.55 µs / contact instruction	0.21 µs / contact instruction	0.21 µs / contact instruction	0.065 µs / contact instruction
Number of Instructions	27 sequence instructions, 2 step ladder instructions, 85 applied instructions	29 sequence instructions, 2 step ladder instructions, 116 applied instructions	29 sequence instructions, 2 step ladder instructions, 123 applied instructions	29 sequence instructions, 2 step ladder instructions, 210 applied instructions
Programming Language	Step ladder, instruction list, SFC Step ladder, structured text, simple ladder, function block			
Program Execution	Cyclical execution, refresh mode processing			
Program Protection	8 character keyword with 3 protection levels each (*1)	2 different keywords, maximum password length 16 characters		8 or 16-character keyword protection with 3 protection levels each (*1)
Devices				
Auxiliary Relays	512 total, with 384 general (M0 - M383) and 128 latched (M384 - M511)	1,536 total, with 384 general (M0 - M383), 128 EEPROM latched (M384 - M511), 1,024 general (M512 - M1535)	7,680 total, with 384 general (M0 - M384), 1152 EEPROM latched (M384 - M1535), and 6,144 general/optional latched (M1536 - M7679)	7,680 total, with 500 general (M0 - M499), 524 optional latched (M500 - M1023), and 6,656 latched (M1024 - M7679)
Special Auxiliary Relays	256 (M8000 - M8255)	512 (M8000 - M8511)		
State Relays	128 all latched (S0 - S127)	256 total, with 128 EEPROM latched (S0 - S127) and 128 general (S128 - S255)	4,096 total, with 1,000 EEPROM latched (S0 - S999) and 3,096 general/optional latched (S1000 - S4095)	4,096 total, with 1,000 optional latched (S0 - S999) and 3,096 latched (S1000 - S4095)
Timers	64 total, with 31 points partially switchable between 100ms and 10ms (T32 - T62)	138 total, with 38 100 ms (T0 - T31 and T132 - T137), 31 100ms/10ms switchable (T32 - T62), and 65 1 ms (T63 - T127)	320 total, with 206 100ms (T0 - T199 and T250 - T255), 46 10ms (T200 - T245), and 68 1ms (T246 - T249 and T256 - T319)	512 total, with 206 100ms (T0 - T191, T192 - T199 and T250 - T255), 46 10ms (T200 - T245), and 260 1ms (T246 - T249 and T256 - T511)
External Setpoint Entry Via Potentiometer	2			0
Counters	32 total (16 - bit only), with 16 general (C0 - C15) and 16 latched (C16 - C31)	67 total (16-bit and 32-bit), with 51 general (C0-C15 and C200-C234) and 16 EEPROM latched (C16-C31)	235 total (16-bit and 32-bit), with 36 general (C0 - C16 and C200 - C219) and 199 EEPROM latched (C16 - C199 and C220 - C234)	235 total (16-bit and 32-bit), with 120 general (C0 - C99 and C200 - C219) and 115 latched (C100 - C199 and C220 - C234)
High-Speed Counters	1 phase, 6 points max: 60 kHz / 2 points, 10 kHz / 4 points ; 2 phase, 2 points max: 30 kHz / 1 point, 5 kHz / 1 point	138 total, with 38 100 ms (T0-T31 and T132-T137), 31 100ms/10ms switchable (T32-T62), and 65 1 ms (T63-T127)	21 total, with 16 1-phase (C235 - C250) and 5 2-phase (C251 - C255)	
High-Speed Counter Speed	-	1 phase, 6 points max: 60 kHz/2 points, 10 kHz / 4 points	1 phase, 6 points max: 60 kHz/ 4 points, 10 kHz / 2 points 2 phase, 3 points max: 30 kHz / 2 points, 5kHz/1 point	1 phase, 8 points max: 100 kHz/ 6 points; 10 kHz / 2 points 2 phase, 2 points max: 50 kHz / 2 points
Real-Time Clock	-	Year, month, day, hour, minute, second, day of the week		
Data Registers	256 total, with 128 general (D0 - D127) and 128 latched (D128 - D255)	3,000 total, with 128 general (D0-D127), 128 EEPROM latched (D128-D255), 2,744 general (D256-D2999)	8,000 total, with 128 general (D0 - D127), 972 EEPROM latched (D128 - D1099), and 6,900 general/optional latched (D1100 - D7999)	8,000 total, with 200 general (D0 - D199), 312 optional latched (D200 - D511), and 7,488 latched (D512 - D7999)
Extension Registers	-	-	24,000 (R0~R23999)	32,768 (R0~R32767)
Extension File Registers	-	-	24,000 (ER0~R23999) internal/optional memory	32,768 (ER0~R32767) optional memory
Index Registers	16			
Special Data Registers	256 (D8000 - D8255)	512 (D8000 - D8511)		
Pointers	64	256	2,048	4,096
Nestings	8			
Interrupt Inputs	6			
Constants	16-bit: K: -32,768 to +32,767; H: 0 to FFFF; 32-bit: K: -2,147,483,648 to +2,147,483,647; H: 0 to FFFF FFFF			

Note:

1. 8-character keyword protection level depends on the keyword registered; 16-character keyword protection level is set within GX-Developer

Environmental Specifications

Model Number	FX1S	FX3S	FX3G/FX3GE	FX3U	FX3UC
Ambient Temperature	0 - 55 °C (storage temperature: -20 to +70° C)	0 - 55° C (storage temperature: -25 to +75° C)			
Noise Durability	1000 Vpp with noise generator; 1 µs at 30 - 100 Hz				
Dielectric Withstand Voltage	AC PSU: 1500VAC, 1 min. / DC PSU: 500VAC, 1 min.	AC PSU: 1500VAC, 1 min.	AC PSU: 1500VAC, 1 min. / DC PSU: 500VAC, 1 min.		500VAC, 1 min.
Ambient Relative Humidity	35 - 85% (non-condensing)	5 - 95% (non-condensing)			
Shock Resistance	Complies to IEC 68-2-27: 147 m/s² (3 times each in 3 directions for 11 ms)				
Vibration Resistance	Complies to IEC 68-2-6: 9.8 m/s² (resistance to vibrations from 57 - 150 Hz for 80 minutes along all 3 axes); 4.9 m/s² for DIN rail mounting				
Insulation Resistance	500VDC, 5 MΩ				
Ground	Class D: Grounding resistance 100Ω or less				
Fuse	AC models: 250 V 1.0A; DC models: 250V 0.8A	250 V 1A	For FX3G-14M_ and FX3G_-24M_ AC: 250V 1A; DC: 250V 3.15A For FX3G_-40M_ and FX3G-60M_: 250V 3.15A	From FX3U-16M_ to FX3U-32M_ 250V 3.15A; From FX3U-48M_ to FX3U-128M_: 250V 5A	125V 3.15A
Environment	Avoid environments containing corrosive gases, install in a dust-free location.				

Electrical Specifications

Power Supply Specifications	FX1S AC Powered Models (FX1S-_M_-ES/UL)	FX1S DC Powered Models (FX1S-_M_-DS/-DSS)	FX3S AC Powered Models (FX3S-_M_/ES/ESS)	FX3GE AC Powered Models (FX3GE-_M_/ES/ESS)	FX3G AC Powered Models (FX3G-_M_/ES/ESS)	FX3G DC Powered Models (FX3G-_M_/DS/DSS)	FX3U AC Powered Models (FX3U-_M_ES/ESS)	FX3U DC Powered Models (FX3U-_M_/DS/DSS)	FX3UC
Power Supply	100-240VAC (+10% / -15%), 50/60 Hz (±10%)	24VDC (+10% / -15%)	100-240VAC (+10% / -15%), 50/60 Hz	100-240VAC (+10% / -15%), 50/60 Hz	100-240VAC (+10% / -15%), 50/60 Hz	24VDC (+20% / -15%)	100-240VAC (+10% / -15%), 50/60 Hz	24VDC (+20% / -30%)	24VDC (+20% /-15%) Ripple Voltage (p-p) 5% or less
Inrush Current at ON	15A / 5 ms (at 100VAC); 25A / 5 ms (at 200VAC)	10A / 0.1 ms (at 24VDC)	15A / 5ms (at 100VAC); 28A / 5ms (at 200VAC)	30A / 5ms (at 100VAC); 50A / 5ms (at 200VAC)	30A / <5 ms (at 100VAC); 50A / <5 ms (at 200VAC)	30A / <1 ms (at 24VAC)	30A / <5 ms (at 100VAC); 65A / <5 ms (at 200VAC)	35A / <0.5 ms (at 24VDC);	30A / < 0.5ms (at 24VDC)
Allowable Momentary Power Failure Time	10 ms	5 ms	10 ms	10 ms	10 ms	5ms	10 ms	5 ms	5 ms
External Service Power Supply (24VDC)	400 mA	-	400 mA	400 mA	400 mA	-	FX3U-16/32MR/ES: 400 mA/ FX3U-48 / 64/80/128MR/ES: 600 mA	-	-

Output Specifications		FX1S Relay Models	FX1S Transistor Models	FX3S Relay Models	FX3S Transistor Models	FX3G / FX3GE Relay Models	FX3G Transistor Models	FX3U Relay Models	FX3U Transistor Models	FX3U Triac Models	FX3UC Relay Models	FX3UC Transistor Models
Switching Voltage (Max.) (V)		<250VAC, <30VDC	5 - 30VDC	<250VAC, <30VDC	5 - 30VDC	<240VAC, <30VDC	5 - 30VDC	<240VAC, <30VDC	5 - 30VDC	85 - 242VAC	<240VAC, <30VDC	5 - 30VDC
Max. Output Current	Per Output (A)	2	0.5	2	0.5	2	0.5	2	0.5	0.3	2	0.3A (Y0 - Y3), and 0.1A (Y4 or higher)
	Per Group (A) (*1)	8	0.8	8	0.8	8	0.8	8	0.8	0.8	8	0.8
Max. Switching Current (Inductive Load)		80 VA	12 W	80 VA	12 W	80 VA	12 W	80 VA	12 W	15VA / 100VAC 30VA / 240VAC	80VA	12W (7.2W per point for Y0 - Y3 and 2.4W per point for Y4 or higher)
Response Time (ms)		10	0.2	10	0.2	10	< 0.2 (< 5µs for Y0, Y1)(*4)	10	< 0.2 (< 5µs for Y0, Y2)	1 ms	10	< 0.2 (< 5µs for Y0, Y2)
Life of Contacts (Switching Times)		3,000,000 at 20VA; 1,000,000 at 35VA; 200,000 at 80VA	-	3,000,000 at 20VA; 1,000,000 at 35VA; 200,000 at 80VA	-	3,000,000 at 20VA; 1,000,000 at 35VA; 200,000 at 80VA (*2)	-	3,000,000 at 20VA; 1,000,000 at 35VA; 200,000 at 80VA (*2)	-	-	3,000,000 at 20VA; 1,000,000 at 35VA; 200,000 at 80kA	- (*3)

Notes:

1. This limitation applies to the maximum output current for each reference terminal (Common), each serving 1 to 4 relay or transistor outputs. Please observe the reference terminal assignments for group identification.
2. Not guaranteed by Mitsubishi Electric.
3. Refer to the specifications of the Terminal Block being used.
4. The 40 and 60 I/O pints main units supports 0.5¯µs for Y2.

Main Unit Options

FX3U

FX3U Main Units with 16 I/O

Model Number	FX3U-16MR/DS	FX3U-16MR/ES	FX3U-16MT/DSS	FX3U-16MT/DS	FX3U-16MT/ESS	FX3U-16MT/ES
Stocked Item	S	S	S	S	S	S
Rating	UL • cUL • CE (EMC)					
Integrated Inputs/Outputs	16	16	16	16	16	16
Power Supply	24VDC	100-240VAC	24VDC	24VDC	100-240VAC	100-240VAC
Integrated Inputs	8	8	8	8	8	8
Integrated Outputs	8	8	8	8	8	8
Output Type	Relay	Relay	Transistor (Source)	Transistor (Sink)	Transistor (Source)	Transistor (Sink)
Power Consumption W	25	30	25	25	30	30
Weight (kg)	0.60	0.60	0.60	0.60	0.60	0.60
Dimensions (W x H x D) mm	130 x 90 x 86	130 x 90 x 86	130 x 90 x 86	130 x 90 x 86	130 x 90 x 86	130 x 90 x 86

FX3U Main Units with 32 I/O

Model Number	FX3U-32MR/DS	FX3U-32MR/ES	FX3U-32MT/DSS	FX3U-32MT/DS	FX3U-32MT/ESS	FX3U-32MT/ES	FX3U-32MR/UA1	FX3U-32MS/ES
Stocked Item	S	S	S	S	S	S	S	S
Rating	UL • cUL • CE (EMC)							
Integrated Inputs/Outputs	32	32	32	32	32	32	32	32
Power Supply	24VDC	100-240VAC	24VDC	24VDC	100-240VAC	100-240VAC	100-240VAC	100-240VAC
Integrated Inputs	16	16	16	16	16	16	16	16
Integrated Outputs	16	16	16	16	16	16	16	16
Output Type	Relay	Relay	Transistor (Source)	Transistor (Sink)	Transistor (Source)	Transistor (Sink)	Relay	Triac
Power Consumption W	30	35	30	30	35	35	35	35
Weight (kg)	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Dimensions (W x H x D) mm	150 x 90 x 86	150 x 90 x 86	150 x 90 x 86	150 x 90 x 86	150 x 90 x 86	150 x 90 x 86	182 x 90 x 86	150 x 90 x 86

FX3U Main Units with 48 I/O

Model Number	FX3U-48MR/DS	FX3U-48MR/ES	FX3U-48MT/DSS	FX3U-48MT/DS	FX3U-48MT/ESS	FX3U-48MT/ES
Stocked Item	S	S	S	S	S	S
Rating	UL • cUL • CE (EMC)					
Integrated Inputs/Outputs	48	48	48	48	48	48
Power Supply	24VDC	100-240VAC	24VDC	24VDC	100-240VAC	100-240VAC
Integrated Inputs	24	24	24	24	24	24
Integrated Outputs	24	24	24	24	24	24
Output Type	Relay	Relay	Transistor (Source)	Transistor (Sink)	Transistor (Source)	Transistor (Sink)
Power Consumption W	35	40	35	35	40	40
Weight (kg)	0.85	0.85	0.85	0.85	0.85	0.85
Dimensions (W x H x D) mm	182 x 90 x 86	182 x 90 x 86	182 x 90 x 86	182 x 90 x 86	182 x 90 x 86	182 x 90 x 86

FX3U Main Units with 64 I/O

Model Number	FX3U-64MR/DS	FX3U-64MR/ES	FX3U-64MT/DSS	FX3U-64MT/DS	FX3U-64MT/ESS	FX3U-64MT/ES	FX3U-64MR/UA1	FX3U-64MS/ES
Stocked Item	S	S	S	S	S	S	S	S
Rating	UL • cUL • CE (EMC)							
Integrated Inputs/Outputs	64	64	64	64	64	64	64	64
Power Supply	24VDC	100-240VAC	24VDC	24VDC	100-240VAC	100-240VAC	100-240VAC	100-240VAC
Integrated Inputs	32	32	32	32	32	32	32	32
Integrated Outputs	32	32	32	32	32	32	32	32
Output Type	Relay	Relay	Transistor (Source)	Transistor (Sink)	Transistor (Source)	Transistor (Sink)	Relay	Triac
Power Consumption W	40	45	40	40	45	45	45	45
Weight (kg)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Dimensions (W x H x D) mm	220 x 90 x 86	220 x 90 x 86	220 x 90 x 86	220 x 90 x 86	220 x 90 x 86	220 x 90 x 86	285 x 90 x 86	220 x 90 x 86

FX3U Main Units with 80 I/O

Model Number	FX3U-80MR/DS	FX3U-80MR/ES	FX3U-80MT/DSS	FX3U-80MT/DS	FX3U-80MT/ESS	FX3U-80MT/ES
Stocked Item	-	S	-	S	S	S
Rating	UL • cUL • CE (EMC)					
Integrated Inputs/Outputs	80	80	80	80	80	80
Power Supply	24VDC	100-240VAC	24VDC	24VDC	100-240VAC	100-240VAC
Integrated Inputs	40	40	40	40	40	40
Integrated Outputs	40	40	40	40	40	40
Output Type	Relay	Relay	Transistor (Source)	Transistor (Sink)	Transistor (Source)	Transistor (Sink)
Power Consumption W	45	50	45	45	50	50
Weight (kg)	1.2	1.2	1.2	1.2	1.2	1.2
Dimensions (W x H x D) mm	285 x 90 x 86	285 x 90 x 86	285 x 90 x 86	285 x 90 x 86	285 x 90 x 86	285 x 90 x 86

FX3U Main Units with 128 I/O

Model Number	FX3U-128MR/ES	FX3U-128MT/ESS	FX3U-128MT/ES
Stocked Item	S	-	-
Rating	UL • cUL • CE (EMC)		
Integrated Inputs/Outputs	128	128	128
Power Supply	100-240VAC	100-240VAC	100-240VAC
Integrated Inputs	64	64	64
Integrated Outputs	64	64	64
Output Type	Relay	Transistor (Source)	Transistor (Sink)
Power Consumption W	65	65	65
Weight (kg)	1.8	1.8	1.8
Dimensions (W x H x D) mm	350 x 90 x 86	350 x 90 x 86	350 x 90 x 86

FX3UC

FX3UC Main Units with 16 - 96 I/O

Model Number	FX3UC-16MT/D	FX3UC-16MT/DSS	FX3UC-16MR/DS-T	FX3UC-32MT/D	FX3UC-32MT/DSS	FX3UC-64MT/D	FX3UC-64MT/DSS	FX3UC-96MT/D	FX3UC-96MT/DSS
Stocked Item	-	S	S	-	S	S	-	-	S
Rating	UL • cUL • CE (EMC)							UL • cUL	UL • cUL • CE (EMC)
Integrated Inputs/Outputs	16	16	16	32	32	64	64	96	96
Integrated Inputs	8	8	8	16	16	32	32	48	48
Input Type	Sink	Sink / Source	Sink / Source	Sink	Sink / Source	Sink	Sink / Source	Sink	Sink / Source
Integrated Outputs	8	8	8	16	16	32	32	48	48
Output Type	Transistor (Sink)	Transistor (Source)	Relay	Transistor (Sink)	Transistor (Source)	Transistor (Sink)	Transistor (Source)	Transistor (Sink)	Transistor (Source)
Power Consumption W	6	6	6	8	8	11	11	14	14
Weight (kg)	0.2	0.2	0.2	0.2	0.2	0.3	0.3	0.35	0.35
Dimensions (W x H x D) mm	34 x 90 x 74	34 x 90 x 74	34 x 90 x 74	34 x 90 x 74	34 x 90 x 74	59.7 x 90 x 74	59.7 x 90 x 74	85.4 x 90 x 74	85.4 x 90 x 74

FX3G

FX3G Main Units with 14 I/O

Model Number	FX3G-14MR/DS	FX3G-14MR/ES	FX3G-14MT/DSS	FX3G-14MT/DS	FX3G-14MT/ESS	FX3G-14MT/ES
Stocked Item	S	S	S	S	S	S
Rating	UL • cUL • CE (EMC)					
Integrated Inputs/Outputs	14	14	14	14	14	14
Power Supply (V)	24VDC	100-240VAC	24VDC	24VDC	100-240VAC	100-240VAC
Integrated Inputs	8	8	8	8	8	8
Integrated Outputs	6	6	6	6	6	6
Output Type	Relay	Relay	Transistor (Source)	Transistor (Sink)	Transistor (Source)	Transistor (Sink)
Power Consumption (W)	19	31	19	19	31	31
Weight (kg)	0.5	0.5	0.5	0.5	0.5	0.5
Dimensions (W x H x D) mm	90 x 90 x 86	90 x 90 x 86	90 x 90 x 86	90 x 90 x 86	90 x 90 x 86	90 x 90 x 86

FX3G Main Units with 24 I/O

Model Number	FX3G-24MR/DS	FX3G-24MR/ES	FX3G-24MT/DSS	FX3G-24MT/DS	FX3G-24MT/ESS	FX3G-24MT/ES
Stocked Item	S	S	S	S	S	S
Rating	UL • cUL • CE (EMC)					
Integrated Inputs/Outputs	24	24	24	24	24	24
Power Supply (V)	24VDC	100-240VAC	24VDC	24VDC	100-240VAC	100-240VAC
Integrated Inputs	14	14	14	14	14	14
Integrated Outputs	10	10	10	10	10	10
Output Type	Relay	Relay	Transistor (Source)	Transistor (Sink)	Transistor (Source)	Transistor (Sink)
Power Consumption (W)	21	32	21	21	32	32
Weight (kg)	0.55	0.55	0.55	0.55	0.55	0.55
Dimensions (W x H x D) mm	90 x 90 x 86	90 x 90 x 86	90 x 90 x 86	90 x 90 x 86	90 x 90 x 86	90 x 90 x 86

FX3G Main Units with 40 I/O

Model Number	FX3G-40MR/DS	FX3G-40MR/ES	FX3G-40MT/DSS	FX3G-40MT/DS	FX3G-40MT/ESS	FX3G-40MT/ES
Stocked Item	S	S	S	S	S	S
Rating	UL • cUL • CE (EMC)					
Integrated Inputs/Outputs	40	40	40	40	40	40
Power Supply (V)	24VDC	100-240VAC	24VDC	24VDC	100-240VAC	100-240VAC
Integrated Inputs	24	24	24	24	24	24
Integrated Outputs	16	16	16	16	16	16
Output Type	Relay	Relay	Transistor (Source)	Transistor (Sink)	Transistor (Source)	Transistor (Sink)
Power Consumption (W)	25	37	25	25	37	37
Weight (kg)	0.7	0.7	0.7	0.7	0.7	0.7
Dimensions (W x H x D) mm	130 x 90 x 86	130 x 90 x 86	130 x 90 x 86	130 x 90 x 86	130 x 90 x 86	130 x 90 x 86

FX3G Main Units with 60 I/O

Model Number	FX3G-60MR/DS	FX3G-60MR/ES	FX3G-60MT/DSS	FX3G-60MT/DS	FX3G-60MT/ESS	FX3G-60MT/ES
Stocked Item	S	S	S	S	S	S
Rating	UL • cUL • CE (EMC)					
Integrated Inputs/Outputs	60	60	60	60	60	60
Power Supply (V)	24VDC	100-240VAC	24VDC	24VDC	100-240VAC	100-240VAC
Integrated Inputs	36	36	36	36	36	36
Integrated Outputs	24	24	24	24	24	24
Output Type	Relay	Relay	Transistor (Source)	Transistor (Sink)	Transistor (Source)	Transistor (Sink)
Power Consumption (W)	29	40	29	29	40	40
Weight (kg)	0.85	0.85	0.85	0.85	0.85	0.85
Dimensions (W x H x D) mm	175 x 90 x 86	175 x 90 x 86	175 x 90 x 86	175 x 90 x 86	175 x 90 x 86	175 x 90 x 86

FX3GE

FX3GE Main Units with 24 I/O

Model Number	FX3GE-24MR/ES
Stocked Item	S
Rating	UL • cUL • CE (EMC)
Integrated Inputs/Outputs	24
Integrated Inputs	100-240VAC
Input Type	14
Integrated Outputs	10
Output Type	Relay
Power Consumption W	32
Weight (kg)	0.6
Dimensions (W x H x D) mm	130 x 90 x 86

FX3GE Main Units with 40 I/O

Model Number	FX3GE-40MR/ES
Stocked Item	S
Rating	UL • cUL • CE (EMC)
Integrated Inputs/Outputs	40
Integrated Inputs	100-240VAC
Input Type	24
Integrated Outputs	16
Output Type	Relay
Power Consumption W	37
Weight (kg)	0.8
Dimensions (W x H x D) mm	175 x 90 x 86

FX3S

FX3S Main Units with 10 - 14 I/O

Model Number	FX3S-10MR/ES	FX3S-10MT/ES	FX3S-10MT/ESS	FX3S-14MR/ES	FX3S-14MT/ES	FX3S-14MT/ESS
Stocked Item	S	S	S	S	S	S
Rating	UL • cUL • CE (EMC)					
Integrated Inputs/Outputs	10	10	10	14	14	14
Power Supply (V)	100 - 240VAC	100 - 240VAC	100 - 240VAC	100 - 240VAC	100 - 240VAC	100 - 240VAC
Integrated Inputs	6	6	6	8	8	8
Integrated Outputs	4	4	4	6	6	6
Output Type	Relay	Transistor (Sink)	Transistor (Source)	Relay	Transistor (Sink)	Transistor (Source)
Power Consumption (W)	19	19	19	19	19	19
Weight (kg)	0.3	0.3	0.3	0.3	0.3	0.3
Dimensions (W x H x D) mm	60 x 90 x 75	60 x 90 x75	60 x 90 x75	60 x 90 x75	60 x 90 x75	60 x 90 x75

FX3S Main Units with 20 - 30 I/O

Model Number	FX3S-20MR/ES	FX3S-20MT/ES	FX3S-20MT/ESS	FX3S-30MR/ES	FX3S-30MT/ES	FX3S-30MT/ESS
Stocked Item	S	S	S	S	S	S
Rating	UL • cUL • CE (EMC)					
Integrated Inputs/Outputs	20	20	20	30	30	30
Power Supply (V)	100 - 240VAC	100 - 240VAC	100 - 240VAC	100 - 240VAC	100 - 240VAC	100 - 240VAC
Integrated Inputs	12	12	12	16	16	16
Integrated Outputs	8	8	8	14	14	14
Output Type	Relay	Transistor (Sink)	Transistor (Source)	Relay	Transistor (Sink)	Transistor (Source)
Power Consumption (W)	20	20	20	21	21	21
Weight (kg)	0.4	0.4	0.4	0.45	0.45	0.45
Dimensions (W x H x D) mm	75 x 90 x 75	75 x 90 x75	75 x 90 x75	100 x 90 x75	100 x 90 x75	100 x 90 x75

FX1S

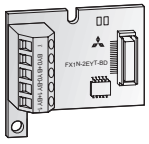
FX1S Main Units with 10 - 14 I/O

Model Number	FX1S-10MR-DS	FX1S-10MR-ES/UL	FX1S-10MT-DSS	FX1S-10MT-ESS/UL	FX1S-10MT	FX1S-14MR-DS	FX1S-14MR-ES/UL	FX1S-14MT-DSS	FX1S-14MT-ESS/UL	FX1S-14MT
Stocked Item	-	S	S	S	-	S	S	S	S	S
Rating	UL • cUL • CE (EMC)				UL • cUL	UL • cUL • CE (EMC)				UL • cUL
Integrated Inputs/Outputs	10	10	10	10	10	14	14	14	14	14
Power Supply	24VDC	100 - 240VAC	24VDC	100 - 240VAC	100 - 240VAC	24VDC	100 - 240VAC	24VDC	100 - 240VAC	100 - 240VAC
Integrated Inputs	6	6	6	6	6	8	8	8	8	8
Integrated Outputs	4	4	4	4	4	6	6	6	6	6
Output Type	Relay	Relay	Transistor (Source)	Transistor (Source)	Transistor (Sink)	Relay	Relay	Transistor (Source)	Transistor (Source)	Transistor (Sink)
Power Consumption (W)	6	19	6	19	19	6.5	19	6.5	19	19
Weight (kg)	0.22	0.3	0.22	0.3	0.3	0.22	0.3	0.22	0.3	0.3
Dimen. (W x H x D) mm	60 x 90 x 49	60 x 90 x 75	60 x 90 x 49	60 x 90 x 75	60 x 90 x 75	60 x 90 x 49	60 x 90 x 75	60 x 90 x 49	60 x 90 x 75	60 x 90 x 75

FX1S Main Units with 20 - 30 I/O

Model Number	FX1S-20MR-DS	FX1S-20MR-ES/UL	FX1S-20MT-DSS	FX1S-20MT-ESS/UL	FX1S-20MT	FX1S-30MR-DS	FX1S-30MR-ES/UL	FX1S-30MT/DSS	FX1S-30MT-ESS/UL	FX1S-30MT
Stocked Item	S	S	S	S	S	S	S	S	S	S
Rating	UL • cUL • CE (EMC)				UL • cUL	UL • cUL • CE (EMC)				UL • cUL
Integrated Inputs/Outputs	20	20	20	20	20	30	30	30	30	30
Power Supply	24VDC	100 - 240VAC	24VDC	100 - 240VAC	100 - 240VAC	24VDC	100 - 240VAC	24VDC	100 - 240VAC	100 - 240VAC
Integrated Inputs	12	12	12	12	12	16	16	16	16	16
Integrated Outputs	8	8	8	8	8	14	14	14	14	14
Output Type	Relay	Relay	Transistor (Source)	Transistor (Source)	Transistor (Sink)	Relay	Relay	Transistor (Source)	Transistor (Source)	Transistor (Sink)
Power Consumption (W)	7	20	7	20	20	8	21	8	21	21
Weight (kg)	0.3	0.4	0.3	0.4	0.4	0.35	0.45	0.35	0.45	0.45
Dimen. (W x H x D) mm	75 x 90 x 49	75 x 90 x 75	75 x 90 x 49	75 x 90 x 75	75 x 90 x 75	100 x 90 x 49	100 x 90 x 75	100 x 90 x 49	100 x 90 x 75	100 x 90 x 75

FX Input / Output Expansion Options



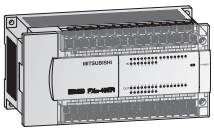
Extension Boards

The FX1N Series extension boards are available for the FX1S main units and add 4 inputs or 2 outputs to the system

Model Number		FX1N-4EX-BD	FX1N-2EYT-BD
Stocked Item		S	S
Rating		UL • cUL • CE (EMC)	
Applicable PLCs		FX1S	FX1S
Integrated Inputs		4	2
Power Supply		5VDC (from main unit); 24VDC / 25 mA (S/S terminal)	5VDC (from main unit)
Integrated Outputs		4	-
Input Level	Voltage	24VDC (+20% / -15%)	-
	Current	5 mA (24VDC)	-
Integrated Outputs		-	2
Output Type		-	Transistor
Max. Switching Voltage		-	5 - 30VDC
Weight		0.02	0.02
Dimensions (W x H x D) mm		43 x 38.5 x 22	43 x 38.5 x 22

Powered Extension Units

The FX2N Series extension units are available with up to 48 integrated I/O with selectable relay or transistor output models.



Model Number		FX2N-32ER-ES/UL	FX2N-32ET-ESS/UL	FX2N-48ER-DS	FX2N-48ER-ES/UL	FX2N-48ER-UA1/UL
Stocked Item		S	S	-	S	S
Rating		UL • cUL • CE (EMC)		CE	UL • cUL • CE (EMC)	
Applicable PLCs		FX3U / FX3G / FX3GE				
Integrated Inputs / Outputs		32	32	48	48	48
Power Supply	AC Range (+10%, -15%)	100-240VAC	100-240VAC	24VDC	100-240VAC	100-240VAC
External Service Power Supply (24VDC) mA		250	250	-	460	-
Power Supply Int. Bus (5VDC) mA		690	690	690	690	690
Integrated Inputs		16 (24VDC)	16 (24VDC)	16 (24VDC)	16 (24VDC)	24 (120VDC)
Integrated Outputs		16	16	24	24	24
Output Type		Relay	Transistor (Source)	Relay	Relay	Relay
ON Voltage (Max.)		Relay version: < 264VAC, < 30VDC; Transistor version: 5 - 30VDC				
Max. Output Current	Per Output (A)	2	0.5	2	2	2
	Per 4 Outputs (A)	8	0.8	8	8	8
Weight (kg)		0.65	0.65	0.85	0.85	1.0
Dimensions (W x H x D) mm		150 x 90 x 87	150 x 90 x 87	182 x 90 x 87	182 x 90 x 87	220 x 90 x 87

Model Number		FX2N-48ET	FX2N-48ET-DSS	FX2N-48ET-ESS/UL
Stocked Item		-	-	-
Rating		-	CE	UL • cUL • CE (EMC)
Applicable PLCs		FX3U / FX3G / FX3GE		
Integrated Inputs / Outputs		48	48	48
Power Supply		100-240VAC	24VDC	100-240VAC
External Service Power Supply (24VDC) mA		460	-	460
Power Supply Int. Bus (5VDC) mA		690	690	690
Integrated Inputs		24 (24VDC)	24 (24VDC)	24 (24VDC)
Output Type		Transistor (Sink)	Transistor (Source)	Transistor (Source)
ON Voltage (Max.)		Relay version: < 264VAC, < 30VDC; Transistor version: 5 - 30VDC		
Max. Output Current	Per Output (A)	0.5	0.5	0.5
	Per 4 Outputs (A)	0.8	0.8	0.8
Weight (kg)		0.85	0.85	0.85
Dimensions (W x H x D) mm		182 x 90 x 87	182 x 90 x 87	182 x 90 x 87

Unpowered Extension Units

The FX2N Series 8 - 16 integrated I/O extension blocks are selectable with relay, transistor or triac outputs.

Model Number		FX2N-8ER-ES/UL	FX2N-8EX-ES/UL	FX2N-8EX-UA1/UL	FX2N-8EYR-ES/UL	FX2N-8EYT	FX2N-8EYT-ESS/UL	FX2N-8EY-S-ES/UL
Stocked Item		S	S	S	S	S	S	S
Rating		UL • cUL • CE (EMC)		UL • cUL	UL • cUL • CE (EMC)	-	UL • cUL	UL
Applicable PLCs		FX3U / FX3UC / FX3G / FX3GE						
Integrated Inputs / Outputs		8	8	8	8	8	8	8
Power Supply		All modular extension units are powered by the base unit						
Integrated Inputs		4 (24VDC)	8 (24VDC)	8 (100-120VAC)	-	-	-	-
Integrated Outputs		4	-	-	8	8	8	8
Output Type		Relay	-	-	Relay	Transistor (Sink)	Transistor (Source)	Relay
ON Voltage (Max.)		Relay version: < 240VAC, < 30VDC; Transistor version: 5 - 30VDC						
Max. Output Current	Per Output (A)	2	-	-	2	0.5	0.5	2.0
	Per 4 Outputs (A)	8	-	-	8	0.8	0.8	Isolated (commons)
5VDC Current Consumption (mA)		25	25	25	30	30	30	30
Weight (kg)		0.2	0.2	0.2	0.2	0.2	0.2	0.3
Dimensions (W x H x D) mm		43 x 90 x 87	43 x 90 x 87	43 x 90 x 87	43 x 90 x 87	43 x 90 x 87	43 x 90 x 87	40 x 90 x 87

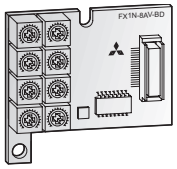
Model Number		FX2N-16EX-ES/UL	FX2N-16EYR-ES/UL	FX2N-16EYS	FX2N-16EYT	FX2N-16EYT-ESS/UL
Stocked Item		S	S	S	S	S
Rating		UL • cUL • CE (EMC)		UL • cUL	-	UL • cUL
Applicable PLCs		FX3U / FX3UC / FX3G / FX3GE				
Integrated Inputs / Outputs		16	16	16	16	16
Power Supply		All modular extension units are powered by the base unit				
Integrated Inputs		16 (24VDC)	-	-	-	-
Integrated Outputs		-	16	16	16	16
Output Type		-	Relay	Triac (SSR)	Transistor (Sink)	Transistor (Source)
ON Voltage (Max.)		Relay version: < 240VAC, < 30VDC; Transistor version: 5 - 30VDC; Triac version: 85 - 242VAC				
Max. Output Current	Per Output (A)	-	2	0.3	0.5	0.5
	Per 4 Outputs (A)	-	8	0.8	0.8	1.6
5VDC Current Consumption (mA)		45	40	160	180	180
Weight (kg)		0.3	0.3	0.3	0.3	0.3
Dimensions (W x H x D) mm		40 x 90 x 87	40 x 90 x 87	40 x 90 x 87	40 x 90 x 87	40 x 90 x 87

FX2NC Unpowered Extension Units

The FX2NC Series extension blocks are available with 16 or 32 integrated I/O with selectable relay or transistor 16-output models.

Model Number		FX2NC-16EX-DS	FX2NC-16EX-T-DS	FX2NC-16EYR-T-DS	FX2NC-16EYT-D/UL	FX2NC-16EYT-DSS	FX2NC-32EX-DS	FX2NC-32EYT-D/UL
Stocked Item		S	S	S	S	S	-	-
Rating		UL • cUL • CE (EMC)			UL • cUL	UL • cUL • CE (EMC)	UL • cUL • CE	UL • cUL
Applicable PLCs		FX3UC						
Integrated Inputs / Outputs		16	16	16	16	16	32	32
Power Supply		All modular extension units are powered by the base unit						
Integrated Inputs		16	16	-	-	-	32 (24VDC)	-
Integrated Outputs		-	-	16	16	16	-	32
Output Type		-	-	Relay	Transistor (Sink)	Transistor (Source)	-	Transistor (Sink)
ON Voltage (Max.)		Relay version: < 240VAC, < 30VDC; Transistor version: 5 - 30VDC						
Max. Output Current	Per Output (A)	-	-	2	0.1	0.1	-	0.1
	Per 4 Outputs (A)	-	-	4	0.8	0.8	-	0.8
5VDC Current Consumption (mA)		30	30	50	30	50	60	100
Weight (kg)		0.15	0.15	0.15	0.15	0.15	0.2	0.2
Dimensions (W x H x D) mm		14.6 x 90 x 87	20.2 x 90 x 89	24.2 x 90 x 89	14.6 x 90 x 87	14.6 x 90 x 87	26.2 x 90 x 87	26.2 x 90 x 87

FX Analog Options



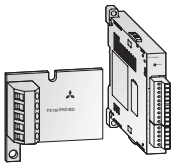
Analog Setpoint

The analog setpoint boards provide 8 analog setpoint potentiometers to the FX system. Setpoints can be polled by the PLC and used as default values for timers, counters and data registers.

Model Number	FX1N-8AV-BD	FX3G-8AV-BD	FX3U-8AV-BD
Stocked Item	S	S	S
Rating	CE (EMC)		
Applicable PLCs	FX1S	FX3G / FX3GE / FX3S	FX3U
Power Supply	5VDC from main unit		
Analog Channels (Inputs)	8-bit	8-bit	8-bit
Related I/O Points	0	0	0
Weight	0.02	0.02	0.02
Dimensions (W x H x D) mm	43 x 38.5 x 22	35 x 51 x 12	19.7 x 46.1 x 53.5

Analog Input

Analog input modules can provide up to 8 analog inputs that are used to convert analog voltage or current signals into digital values which can be used by the FX PLC.



Model Number		FX1N-2AD-BD	FX3G-2AD-BD	FX3U-4AD-ADP	FX3U-4AD	FX3UC-4AD
Stocked Item		S	S	S	S	-
Rating		CE (EMC)		UL • cUL • CE (EMC)		
Applicable PLCs		FX1S	FX3G / FX3GE / FX3S	FX3U / FX3UC / FX3G / FX3GE / FX3S	FX3U / FX3UC / FX3G / FX3GE	FX3UC
Power Supply		5VDC (from main unit)	5VDC (from main unit)	5VDC / 15 mA (from main unit) 24VDC / 40 mA	5VDC / 110 mA (from main unit) 24VDC / 90 mA	5VDC / 100 mA (from main unit) 24VDC / 80 mA
Analog Channels (Input)		2	2	4	4	4
Analog Range		0 to 10VDC / 4 - 20 mA	0 to 10VDC / 4 - 20 mA	0 to 10VDC / 4 - 20 mA	-10 to 10VDC / -20 to +20mA / 4 to 20 mA DC	-10 to 10VDC / -20 to +20mA / 4 to 20 mA DC
Resolution	Voltage	2.5 mV (12 bit)	2.5 mV	2.5 mV (12 bit)	0.32 mV (15 bit + sign)	0.32 mV (15 bit + sign)
	Current	8 µA (11 bit)	8 µA (11 bit)	10 µA (11 bit)	1.25 µA (14 bit + sign)	1.25 µA (14 bit + sign)
Overall Accuracy for Fullscale		±1%	±1%	±0.5% to 1% (*1)	±0.3 to 1% fullscale (*1)	±0.3 to 1% fullscale (*1)
Related I/O Points		0	0	0	8	8
Weight (kg)		0.02	0.02	0.1	0.2	0.13
Dimensions (W x H x D) mm		43 x 38.5 x 22	35 x 51 x 29.2	17.6 x 90 x 89.5	55 x 90 x 87	20.2 x 90 x 89

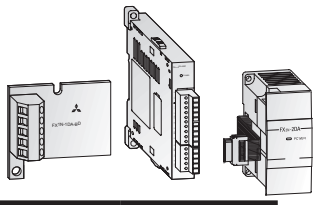
Model Number		FX2N-2AD	FX2N-4AD	FX2NC-4AD	FX2N-8AD (*2)
Stocked Item		S	S	S	S
Rating		UL • cUL • CE (EMC)			
Applicable PLCs		FX3U / FX3UC / FX3G / FX3GE		FX3UC	FX3U / FX3UC / FX3G / FX3GE
Power Supply		5VDC / 20 mA (from main unit) 24VDC / 50 mA (from main unit)	5VDC / 30 mA (from main unit) 24VDC / 55 mA	5VDC / 50 mA (from main unit) 24VDC / 130 mA	5VDC / 50 mA (from main unit) 24VDC / 80 mA
Analog Channels (Input)		2	4	4	8
Analog Range		0 to 10VDC / 0 to 5VDC / 4 to 20mA DC	-10 to 10VDC / -20 to 20mA DC / 4 to 20mA DC	-10 to 10VDC / -20 to 20mA DC / 4 to 20mA DC	-10 to 10VDC / -20 to 20mA DC / 4 to 20mA DC
Resolution	Voltage	2.5 mV (12 bit)	5 mV (11 bit + sign)	0.32 mV (15 bit + sign)	0.63 mV (14 bit + sign)
	Current	4 µA (12 bit)	20 µA (10 bit + sign)	1.25 µA (14 bit + sign)	2.5 µA (13 bit + sign)
Overall Accuracy for Fullscale	Voltage	±1%	±1%	±0.3% - 0.5% (*1)	±0.3 - 0.5% (*1)
	Current			±0.5 - 1.0% (*1)	
Related I/O Points		8	8	8	8
Weight (kg)		0.2	0.3	0.13	0.4
Dimensions (W x H x D) mm		43 x 90 x 87	55 x 90 x 87	20.2 x 90 x 89	75 x 90 x 75

Notes:

1. Dependent on the ambient temperature.
2. The FX2N-8AD can be configured to accept standard analog inputs as well as selected temperature inputs such as K, T or J type thermocouples.

Analog Output

Analog output modules provide up to 4 analog outputs that are used to convert digital values in the PLC to voltage or current signals.

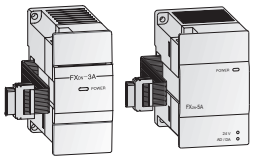


Model Number		FX1N-1DA-BD	FX3G-1DA-BD	FX3U-4DA-ADP	FX3U-4DA	FX2N-2DA	FX2N-4DA	FX2NC-4DA
Stocked Item		S	S	S	S	S	S	S
Rating		CE (EMC)		UL • cUL • CE (EMC)				
Applicable PLCs		FX1S	FX3G /FX3GE / FX3S	FX3U / FX3UC / FX3G / FX3GE / FX3S	FX3U / FX3UC / FX3G / FX3GE / FX3S	FX3U / FX3UC / FX3G / FX3GE	FX3U / FX3UC / FX3G / FX3GE	FX3UC
Power Supply		5VDC (from main unit)	5VDC (from main unit)	5VDC / 15 mA (from main unit) 24VDC / 150 mA	5VDC / 120 mA (from main unit) 24VDC / 160 mA	5VDC / 30 mA (from main unit) 24VDC / 85 mA (from main unit)	5VDC / 30 mA (from main unit) 24VDC / 200 mA	5VDC / 30 mA (from main unit) 24VDC / 130 mA
Analog Channels (Output)		1	1	4	4	2	4	4
Analog Output Range		0 to 10VDC / 4 to 20mA DC	0 to 10VDC / 4 to 20mA DC	0 to 10VDC / 4 to 20mA DC	-10 to 10VDC / 0 to 20mA / 4 to 20mA DC	0 to 10VDC / 0 to 5VDC / 4 to 20mA DC	0 to 10VDC / 0 to 20mA DC / 4 to 20mA DC	-10 to 10VDC / 0 to 20mA DC / 4 to 20mA DC
Resolution	Voltage	2.5 mV (12 bit)	2.5 mV (12 bit)	2.5 mV (12 bit)	0.32 mV (15 bit + sign)	2.5 mV (14 bit)	5 mV (11 bit + sign)	5 mV (11 bit + sign)
	Current	8 µA (11 bit)	8 µA (11 bit)	4 µA (12 bit)	0.63 µA (15 bit)	4 µA (12 bit)	20 µA (10 bit + sign)	20 µA (10 bit + sign)
Overall Accuracy for Fullscale		±1%	±1%	±5% - 1% (*1)	±0.3% - 0.5% (*1)	±1% (*1)	±1% (*1)	±0.5% -1% (*1)
Related I/O Points		0	0	0	8	8	8	8
Weight (kg)		0.02	0.02	0.1	0.2	0.2	0.3	0.13
Dimensions (W x H x D) mm		43 x 38.5 x 22	35 x 51 x 29.2	17.6 x 90 x 89.5	55 x 90 x 87	43 x 90 x 87	55 x 90 x 87	24.2 x 90 x 89

Note: 1. Dependent on the ambient temperature.

Combination Analog Input / Output Modules

Combination analog input / output modules are used for both digital to analog and analog to digital conversion.



Model Number		FX0N-3A*	FX2N-5A*	FX3U-3A-ADP
Stocked Item		S	S	S
Rating		CE (EMC)	UL • cUL • CE (EMC)	UL • cUL
Applicable PLCs		FX3U / FX3UC	FX3U / FX3UC / FX3G / FX3GE	FX3U / FX3UC / FX3G / FX3GE / FX3S
Power Supply		5VDC / 30 mA (from main unit) 24VDC / 90 mA (from main unit)	5VDC / 70 mA (from main unit) 24VDC / 90 mA	5VDC / 20 mA (from main unit) 24VDC / 90 mA
Analog Channels	Input	2	4	2
	Output	1	1	1
Analog Input Range (Resolution)	Voltage	0 to 10VDC (8 bit); 0 to 5VDC (8 bit)	-10 to 10 V (15 bit + sign) -100 to 100 mV (11 bit + sign)	0 to 10VDC (12 bit)
	Current	4 to 20 mA DC (8 bit)	-20 to 20 mVDC (14 bit + sign) 4 to 20 mA DC (14 bit)	4 to 20 mA DC (12 bit)
Analog Output Range (Resolution)	Voltage	0 to 10VDC (8 bit); 0 to 5VDC (8 bit)	-10 to 10VDC (12 bit)	0 to 10VDC
	Current	4 to 20 mA DC (8 bit)	0/4 to 20 mA DC (10 bit)	4 to 20 mA DC
Overall Accuracy for Fullscale		±1%	±0.3 - 1%	±0.5 - 1%
Related I/O Points		8	8	0
Weight (kg)		0.2	0.3	0.1
Dimensions (W x H x D) (mm)		43 x 90 x 87	55 x 90 x 87	17.6 x 90 x 89.5

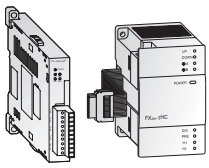
Note: When attaching the FX0N-3A or FX2N-5A analog modules to an FX3UC main unit, the FX2NC-CNV-IF interface adapter or the FX3UC-1PS-5V power supply unit is required.

Temperature Input Options

The analog temperature input modules are used for J and K type thermocouple and Pt100 temperature sensor input and temperature control. 2 open collector transistor outputs are available with the FX2N-2LC, 4 with the FX3U-4LC.

Model Number	FX3U-4AD-PTW-ADP	FX3U-4AD-PT-ADP	FX3U-4AD-PNK-ADP	FX3U-4AD-TC-ADP	FX2N-4AD-TC	FX2N-4AD-PT	FX2N-2LC	FX3U-4LC
Stocked Item	-	S	-	S	S	S	S	S
Rating	UL • cUL • CE (EMC)							
Applicable PLCs	FX3U / FX3UC / FX3G / FX3GE / FX3S				FX3U / FX3UC	FX3U / FX3UC / FX3G / FX3GE		FX3G / FX3GE / FX3U / FX3UC
Power Supply	5VDC / 15 mA (from main unit) 24VDC / 50 mA	5VDC / 15 mA (from main unit) 24VDC / 50 mA	5VDC / 15 mA (from main unit) 24VDC / 50 mA	5VDC / 15 mA (from main unit) 24VDC / 45 mA	5VDC / 40 mA (from main unit) 24VDC / 60 mA	5VDC / 30 mA (from main unit) 24VDC / 50 mA	5VDC / 70 mA (from main unit) 24VDC / 55 mA	5VDC / 160 mA (from main unit) 24VDC / 50 mA
Analog Inputs	4 (Pt100 sensors)	4 (Pt100 sensors)	4 (Pt1000 or Ni1000)	4 (J or K type)	4 (J or K type)	4 (Pt100 sensors)	2 points (Thermocouple and Pt100 sensor)	4 points (Thermocouple and Pt100 sensor)
Compensated Temperature Range (°C)	-100 to +600	-50 to +250	-50 to +250 (Pt1000) -40 to +110 (Ni1000)	-100 to +600 (J type) -100 to +1000 (K type)	-100 to +600 (J type) -100 to +1200 (K type)	-100 to +600	-200 to +1300	-200 to +1300
Digital Outputs	-1000 to +6000	-500 to +2500	-500 to +2500 (Pt1000) -400 to +1100 (Ni1000)	-1000 to +6000 (J type) -1000 to +10000 (K type)	-1000 to +6000 (J type) -1000 to +12000 (K type)	-1000 to +6000	2 transistor output points	4 transistor output points
Resolution (°C)	0.2 to 0.3	0.1	0.1	0.3 (J type) 0.4 (K type)	0.3 (J type) 0.4 (K type)	0.2 - 0.3	0.1 or 1	0.1 or 1
Overall Accuracy for Fullscale	±0.5% - 1%*	±0.5% - 1%*	±0.5% - 1%*	±0.5% - 1%*	±0.5% - 1%*	±1.0%	±0.3% - 0.7% (±1 digit)*	±0.3% - 0.7% (±1 digit)*
Related I/O Points	0	0	0	0	8	8	8	8
Weight	0.1	0.1	0.1	0.1	0.3	0.3	0.3	0.4
Dimensions (W x H x D) mm	17.6 x 90 x 89.5	17.6 x 90 x 89.5	17.6 x 90 x 89.5	17.6 x 90 x 89.5	55 x 90 x 87	55 x 90 x 87	55 x 90 x 87	90 x 90 x 80

Note: Dependent on the ambient temperature.



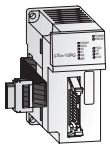
FX High-Speed I/O and Positioning Expansion

High-Speed Counters and Pulse Train Output

These high-speed modules provide additional counting and pulse output features to the PLC.

Model Number		FX2N-1HC	FX2NC-1HC	FX3U-2HC	FX3U-4HSX-ADP	FX3U-2HSY-ADP
Stocked Item		S	-	S	S	S
Rating		UL • cUL • CE (EMC)				
Applicable PLCs		FX3U / FX3UC	FX3UC	FX3U / FX3UC	FX3U	FX3U
Signal Level		5, 12, 24VDC / 7 mA			5VDC	-
Power Supply	5VDC	90 mA (from main unit)		245 mA (from main unit)	30 mA (from main unit)	
	24VDC	-		-	30 mA (from main unit)	60 mA (from main unit)
Maximum Connectivity		-		-	2	2
Counter	Inputs	1 phase (1 input or 2 input); 2 phase (1 edge, 2 edge or 4 edge count)			4	-
	Outputs	-			-	2
Max Counter Frequency	Input	50 kHz		200 kHz	1 phase: 200kHz; 2 phase: 100kHz	-
	Output	-				200 kHz
Input Format		Differential line receiver and open collector			Differential line receiver (equivalent to AM26C32) photocoupler isolation on inputs	-
Type of Counter		Up / down counter, ring counter			-	
Output Format		-				Differential line driver (equivalent to AM26C32) pulse/direction or forward/ reverse rotation)
Counting Range (Up/Down & Ring Counter)	16 Bit	0 to 65,535			-	
	32 Bit	-2147483648 to +2147483647			-	
Output Type		2 x transistor (5 to 24VDC / 0.5A)		4 x transistor (5 to 24VDC / 0.5A)	-	less than 25 mA
Related I/O Points		8			4 (4 input)	4 (2 output points occupied per high-speed output)
Dimensions (W x H x D) mm		55 x 90 x 87	20.2 x 90 x 89	55 x 90 x 87	17.6 x 90 x 89.5	17.6 x 90 x 89.5

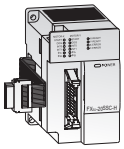
1-Axis Positioning



The FX3U-1PG and FX2N-10PG positioning modules are extremely efficient single-axis positioning modules for controlling either step drives or servo drives (by external regulator) with a pulse train.

Model Number		FX3U-1PG	FX2N-10PG
Stocked Item		S	S
Rating		UL • cUL • CE (EMC)	
Applicable PLCs		FX3U / FX3UC	
Input Signal Level		24VDC / 40 mA	5VDC / 100 mA; 24VDC / 70 mA
Signal Level	Pulse Output	5 to 24VDC / 35 mA	5 to 24VDC / 25 mA
	CLR Signal	5 to 24VDC / 20 mA	5 to 24VDC / 20 mA
Power Supply		5VDC / 150 mA (from main unit)	5VDC / 120 mA (from main unit)
Accessible Axes		1	1
Output Frequency		Max. 100 kHz	Max. 1 MHz
Related I/O Points		8	8
Weight (kg)		0.2	0.2
Dimensions W x H x D (mm)		43 x 90 x 87	43 x 90 x 87
Function		Servo / stepper pulse control	Advanced servo / stepper control

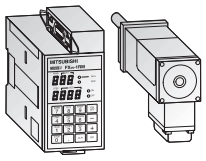
2-Axis Positioning



High-performance 2-axis positioning module featuring simultaneous and interpolated 2-axis positioning control. With its dedicated setup, monitor and testing software, FX Configurator-FP, all aspects of the servo system can be controlled.

Model Number		FX3U-20SSC-H
Stocked Item		S
Rating		UL • cUL • CE (EMC)
Applicable PLCs		FX3U / FX3UC
Number of Controllable Axes		2 axes
Related I/O		8
Connectable Servo Amplifier		MELSERVO MR-J3-B/MR-J3W-B/MR-J3-BS maximum 2 amplifiers can be connected; Standard cord length: Station-to-station maximum 20m, Long distance cord length: Station-to-station maximum 50m
Servo Bus		SSCNET III
Scan Cycle		1.77 ms
Positioning	Method	Increment / Absolute
	User Units	PLS, μm, 10^{-4} inch, mdeg
	Unit Magnification	1, 10, 100, and 1,000-fold
	Positioning Range	-2,147,483,648 to -2,147,483,648 PLS
	Speed Units	Hz, cm/min, 10deg/min, inch/min
	Acceleration / Deceleration Process	Trapezoidal acceleration/deceleration, S-pattern acceleration/deceleration: 1 to 500 ms. Only trapezoidal acceleration/deceleration is available for interpolation
	Starting Time	1.6 ms or less
	Interpolation Function	2-axis linear interpolation, 2-axis circular interpolation
Power Supply		24VDC + 20% -15% Ripple (p-p) within 5%
Power Consumption		5W
Weight (kg)		0.3
Dimensions (W x H x D) mm		55 x 90 x 87

Cam Switch

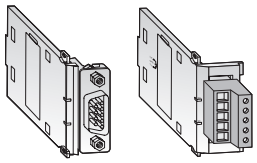


The FX2N-1RM-E-SET is often called an electronic cam module. It can be used to replace a mechanical camming system with a virtual electronic cam sequence using a resolver module.

Model Number	FX2N-1RM-E-SET
Stocked Item	S
Rating	CE (EMC)
Applicable PLCs	FX3U / FX3UC
Number of Controllable Axes	1 using resolver F2-720RSV
Maximum Connectivity	3
Number of Cam Output I/O	48 outputs (32 may be ON at one time)
Control Resolution	1 revolution of 720 divisions (0.5 degrees) or 360 divisions (1 degree)
Response	415 rpm with 0.5 degrees or 830 rpm with 1 degree
ON/OFF Frequency	8 times per CAM profile
Resolver	3000 rpm
Maximum Cable Length	up to 100 m
Power Supply	24VDC (-15% to +10%); 300 mA (400 mA when 32 outputs are ON)
Related I/O Points	8 (*1)
Weight (kg)	0.5
Dimensions (W x H x D) mm	55 x 111 x 97

Note 1: The number of related I/O points will always be 8, regardless of how many units are attached.

FX Communications and Networking Expansion



Serial Communication

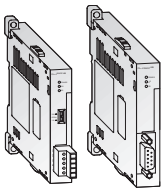
These communication expansion boards allow their respective FX main units to communicate with external devices and other FX main units over a variety of serial networks.

Model Number	FX2N-232IF	FX1N-232-BD	FX1N-422-BD	FX1N-485-BD	FX3G-232-BD	FX3U-USB-BD	FX3G-422-BD	FX3G-485-BD	FX3G-485-BD-RJ (*1)
Stocked Item	S	S	S	S	S	S	S	S	S
Rating	CE (EMC)								
Applicable PLCs	FX3U / FX3UC	FX1S	FX1S	FX1S	FX3G / FX3GE / FX3S	FX3U	FX3G / FX3GE / FX3S	FX3G / FX3GE / FX3S	FX3G / FX3GE / FX1S
Interface	RS-232 with 9-pole D-SUB connector	RS-232 with 9 pole D-SUB connector	RS-422 with 8 pole mini DIN connector	RS-485 with terminal block	RS-232 with 9 pole D-SUB connector	USB (Mini B)	RS-422 with 8 pole mini DIN connector	RS-485	RS-485 with RJ-45 connector
Power Supply	5VDC / 40 mA (from main unit), 24VDC / 80 mA	5VDC / 60 mA (from main unit)	5VDC / 60 mA (from main unit)	5VDC / 60 mA (from main unit)	5VDC (from main unit)	5VDC / 15mA (from main unit), 30mA (from PC USB connectors)	5VDC (from main unit)	5VDC (from main unit)	5VDC (from main unit)
Related I/O Points	8	-	-	-	-	-	-	-	-
Weight (kg)	0.3	0.02	0.01	0.02	0.2	0.02	0.2	0.2	0.2
Dimensions (W x H x D) (mm)	55 x 90 x 87	43 x 38.5 x 22	43 x 38.5 x 20	43 x 38.5 x 22	35 x 51 x 17.2	19.6 x 46.1 x 53.5	35 x 51 x 14.9	35 x 51 x 29.2	35 x 51 x 29.2

Note 1: Available December 2013.

Modbus and Serial Communication Adapters

These communication special adapters support a wide range of serial communication standards including Modbus.

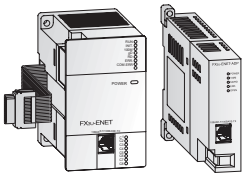


Model Number	FX3U-485ADP-MB	FX3U-232ADP-MB
Stocked Item	S	S
Rating	UL • cUL • CE (EMC)	
Applicable PLCs	FX3U / FX3UC / FX3G / FX3GE / FX3S	
Power Supply	5VDC / 20 mA (from main unit)	5VDC / 30 mA (from main unit)
Interface	RS-485	RS-232C
Communication Speed	Max. 115.2 kbps	Max. 115.2 kbps
Communication Distance	500m	15m
Related I/O Points	0	0
Weight (kg)	0.08	0.08
Dimensions W x H x D (mm)	17.6 x 90 x 89.5	17.6 x 90 x 89.5

Networking Modules

Ethernet

The FX3U-ENET communication module enables 8 ports of simultaneous Ethernet communication with features such as peer-to-peer, email send/receive options, and program upload/download. (The FX2NC-ENET-ADP communication special adapter is an Ethernet interface supporting 10BASE-T communication.)

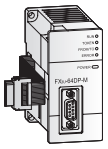


Model Number	FX3U-ENET	FX3U-ENET-ADP	FX2NC-ENET-ADP
Stocked Item	S	S	S
Rating	UL • cUL • CE (EMC)		
Applicable PLCs	FX3U / FX3UC / FX3G / FX3GE	FX3U / FX3UC / FX3G / FX3S	FX1S
Max. Data Transmission	1023 words x 8	1023 words x 4	16 words
Power Supply	24VDC / 240 mA	Supplied from PLC	Supplied from PLC
Communication Cable	Ethernet with RJ45 connector	Ethernet with RJ45 connector	Ethernet with RJ45 connector
Communication Protocol	MC Protocol, TCP / IP / UDP	MC Protocol, TCP / IP / UDP	-
Related I/O Points	8	0	8
Communication With Mail Server	SMTP / POP3	-	-
Maximum Transfer Rate	100 Mbps / 10 Mbps	100 Mbps / 10 Mbps	-
Maximum Segment Length	100 m	100 m	-
Weight (kg)	0.3	0.1	0.1
Dimensions W x H x D (mm)	55 x 90 x 87	17.6 x 90 x 89.5	19 x 90 x 78

Profibus

PROFIBUS-DP allows for the implementation of decentralized control with comprehensive data and alarm processing capabilities. Easy setup is available by using the GX Configurator-DP software package.

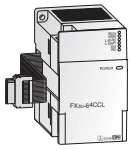
Model Number	FX3U-64DP-M	FX3U-32DP
Stocked Item	S	S
Rating	UL • cUL • CE (EMC)	
Applicable PLCs	FX3U / FX3UC	FX3U / FX3UC / FX3G / FX3GE
Master/Slave	Master	Slave
Power Supply	Internal 24VDC / Max. 155 mA	Internal 24VDC / 145 mA
Version	V 1.0 connector	V 1.0 connector
Communication Speed	Max. 12 Mbps	Max. 12 Mbps
Maximum Distance*	1,200 m	1,200 m
Maximum Number of Slaves	64 / Master	-
Communication Distance (m)	Max. 1200m (depends on communication speed)	
Communication Cable	Profibus cable with Profibus-DP connector	
Related I/O Points	8	8
Dimensions W x H x D (mm)	43 x 90 x 89	43 x 90 x 89

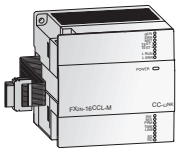


* Depends on communication speed.

CC-Link

CC-Link provides a deterministic network with communication speeds up to 10Mbps



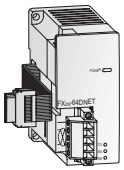


Model Number	FX2N-32CCL	FX3U-64CCL	FX3U-16CCL-M
Stocked Item	S	S	S
Rating	CE (EMC)	UL • cUL • CE (EMC)	UL • cUL • CE (EMC)
Master/Slave	Slave	Intelligent device station (slave)	Master (V2, V1)
Applicable PLCs	FX3U / FX3UC. Cannot use with FX2N-32ASI-M AS-i interface master block	FX3U / FX3UC / FX3G / FX3GE	FX3U / FX3UC / FX3G / FX3GE
Power Supply	5VDC / 130 mA (from main unit) 24VDC / 50 mA	24VDC / 220 mA	24VDC / N/A
Version	V 1.00	V 2.00 / V 1.10	V 2.00 / V 1.10
I/O Points	8	8	8
Weight	0.3	0.3	0.4
Dimensions W x H x D (mm)	43 x 90 x 87	55 x 90 x 87	55 x 90 x 87

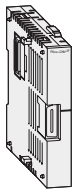
DeviceNet

Allows the FX system to be a Group 2 slave station on a DeviceNet network.

Model Number	FX2N-64DNET
Stocked Item	S
Rating	UL • cUL • CE (EMC)
Applicable PLCs	FX3U / FX3UC
Master/Slave	Slave
Power Supply	5VDC / Max. 12 mA (from main unit) 24VDC / 50 mA
I/O Points	8
Weight	0.2
Dimensions W x H x D (mm)	43 x 90 x 87



FX Interfaces and Power Supplies



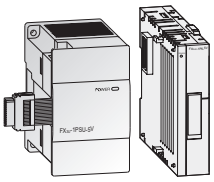
Interface Boards and Modules

The FX Series interface boards enable connection of special adapters to the left side of the associated FX main unit. The FX2NC-CNV-IF interface adapter allows FX3UC main units to connect with the standard FX0N / FX2N / FX3U right side expansion bus.

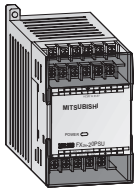
Model Number	FX3U-CF-ADP	FX3S-CNV-ADP	FX3G-CNV-ADP	FX3U-CNV-BD	FX1N-CNV-BD	FX2NC-CNV-IF
Stocked Item	S	S	S	S	S	S
Rating	CE (EMC)					
Applicable PLCs	FX3U / FX3UC	FX3S	FX3G	FX3U	FX1S	FX3UC
Description	CF Card special adapter	Analog and communication special adapter	Analog and communication special adaptor	Analog and communication special adaptor	Function expansion board	Interface adapter to connect with standard FX0N / FX2N / FX3U
Weight (kg)	0.3	0.1	0.1	0.01	0.01	0.3
Dimensions W x H x D (mm)	45 x 90 x 74	14.6 x 90 x 74	14.6 x 90 x 74	19.6 x 46.1 x 53.5	43 x 38 x 14	90 x 14.6 x 74

Power Supply Modules

The FX Series power supply units are used to add power onto the 5V and 24V expansion buses when the built-in service power supplies are not sufficient.



Model Number		FX3U-1PSU-5V	FX3UC-1PS-5V
Stocked Item		S	-
Rating		UL • cUL • CE (EMC)	
Applicable PLCs		FX3U / FX3G	FX3UC
Input Voltage		100 - 240VAC	24VDC +20% - 15%
Input Frequency		50 / 60 Hz	-
Inrush Current		30A max. 5 ms or less / 100VAC 65A max. 5 ms or less / 200VAC	30A max. 0.5 ms / 24VDC
Power Consumption		20 VA max.	25 W max.
Output Current (Internal for Supply)	24VDC	0.3A	-
	5VDC	1A	1A
Holding Time		10 ms / 100VAC	5 ms
Weight (kg)		0.3	0.15
Dimensions W x H x D (mm)		55 x 90 x 87	24.2 x 90 x 74



Power Supply Unit

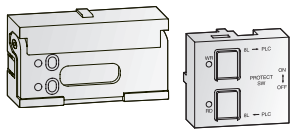
The FX2N-20PSU 24VDC power supply unit is meant to provide a 24VDC power supply for DC powered FX main units, FX special function modules, sensors connected to the FX main units, etc.

Model Number	FX2N-20PSU
Stocked Item	S
Rating	UL • cUL • CE (EMC)
Applicable PLCs	FX1S / FX3U / FX3UC / FX3G / FX3GE
Ambient Temperature	0 - 55°C (-20 - 70°C storage temperature)
Ambient Relative Humidity (Non-Condensing)	35 - 85% (35 - 90% storage humidity)
Input Voltage	100 - 240VAC
Input Frequency	50/60 Hz
Fuse Rating	3.15A (built-in)
Rush Current	60A / 200VAC max.
Output Power	24 DC ±10% / 2A maximum; 0.2A minimum
Ripple Noise	500 mVp-p or less
Holding Time	10 ms / 100VAC
Protection Against Overcurrent	Actuated when current becomes 110 - 160% or more, automatic recovery when voltage drop occurs
Protection Against Overvoltage	Actuated when current becomes 110-140% or more, output shutdown, no automatic recovery (diode clamp)
Weight (kg)	0.3
Dimensions W x H x D (mm)	60 x 98 x 75

Accessories

Memory Cassettes

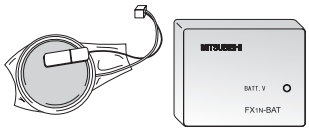
The Loader functionality allows the memory cassette to upload and download programs from and to the internal memory of the FX main units. When the memory cassette is attached to the FX main unit without uploading or downloading, the program on the memory cassette is executed. With the FX3U-FLROM-1M, 1.3MB of additional capacity is provided for symbolic information.



Model Number	FX3U-FLROM-16	FX3U-FLROM-64	FX3U-FLROM-64L	FX3U-FLROM-1M	FX1N-EEPROM-8L	FX3G-EEPROM-32L
Stocked Item	S	S	S	S	S	S
Rating	CE (EMC)					
Applicable PLCs	FX3U / FX3UC				FX1S	FX3G / FX3GE / FX3S
Size	16k steps	64k steps	64k steps	64k steps +1.3MB Symbolic	2k / 8k steps	32k steps
Memory Type	Flash	Flash	Flash	Flash	EEPROM	EEPROM
Protect Switch	Provided	Provided	Provided	Provided	Provided	Provided
Data Transfer Buttons	Not Provided	Not Provided	Provided	Not Provided	Provided	Provided
Dimensions W x H x D (mm)	37 x 20 x 6.1	37 x 20 x 6.1	37 x 20 x 6.1	37 x 20 x 6.1	33 x 30 x 9	35 X 21 X 9.6

Backup Batteries

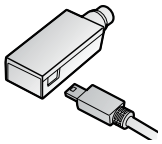
Backup batteries provide enough power to store relevant data within the FX main units and modules when they are not powered.



Model Number	FX3U-32BL	FX1N-BAT
Stocked Item	S	S
Applicable PLCs	FX3U / FX3UC / FX3G / FX3GE	FX1S

Interface Converter

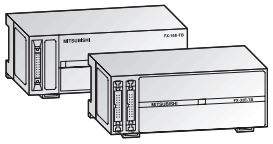
Interface converter is necessary to bridge two different communication types.



Model Number	FX-USB-AW	FX-232AWC-H
Stocked Item	S	-
Rating	CE (EMC)	
Applicable PLCs	FX1S / FX3U / FX3UC / FX3G / FX3GE / FX3S	FX1S / FX3U / FX3UC / FX3G / FX3GE / FX3S
Applications	USB to RS-422 converter	RS-422 to RS-232C converter
Dimensions (W x H x D) mm	14 x 20 x 63	25 x 80 x 60

Terminal Blocks

Remote terminal blocks allow I/O modules to be placed at the point of control. The blocks are connected with FX3UC main units using connector-type I/O cabling.



Model Number		FX-16E-TB	FX-16E-TB/UL	FX-16EX-A1-TB	FX-16EX-A1-TB/UL	FX-16EYR-ES-TB/UL
Stocked Item		-	S	-	-	S
Rating		-	UL • cUL	-	-	UL • cUL
Applicable PLCs		FX3UC				
Max. Number of Inputs/Outputs		16	16	16	16	16 output
Integrated Inputs (Sink)		16 (24VDC)	16 (24VDC)	16 (120VAC)	16 (120VAC)	-
Integrated Outputs		-	-	-	-	16
Output Type		-	-	-	-	Relay
Switching Voltage (Max.)		-	-	-	-	240VAC / 30VDC
Max. Output Current	Per Output (A)	-	-	-	-	2
	Per 4 Outputs (A)	-	-	-	-	8
Dimensions (W x H x D) mm		150 x 55 x 45				

Model Number		FX-16EYS-ES-TB/UL	FX16EYT-TB	FX-16EYT-ES-TB/UL	FX-16EYT-ESS-TB/UL	FX-32E-TB/UL	FX-TB40MIN
Stocked Item		-	-	-	-	-	S
Rating		UL • cUL	-	UL • cUL			-
Applicable PLCs		FX3UC					FX3U-2HC
Max. Number of Inputs/Outputs		16 output	16	16 output	16 output	32	40
Integrated Inputs (Sink)		-	-	-	-	32 (24VDC)	-
Integrated Outputs		16	16	16	16	-	-
Output Type		Triac (SSR)	Transistor Sink	Transistor Source	Transistor Sink	-	-
Switching Voltage (Max.)		242VAC	30VDC	30VDC	30VDC	-	-
Max. Output Current	Per Output (A)	0.3	0.5	0.5	0.5	-	-
	Per 4 Outputs (A)	0.8	0.8	0.8	0.8	-	-
Dimensions (W x H x D) mm		150 x 55 x 45					80 x 87 x 76

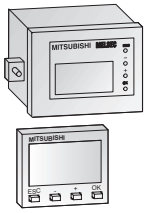
Hand-Held Programmer

A small, industrial programming and maintenance tool for the FX Series. This unit can perform program uploads/downloads and store up to 15 programs in its internal memory. Keywords can be registered, deleted or canceled in applicable PLCs. Program monitoring and data device adjustment functionality is also available. To stay up to date the latest firmware can be downloaded on a PC then installed via the USB port. PLC programs on the PC can also be transferred via USB, eliminating the need for peripheral devices.

Model Number	FX-30P
Stocked Item	S
Rating	UL • cUL • CE
Applicable PLCs	FX1S / FX3U / FX3UC / FX3G / FX3GE / FX3S
Power Supply	5VDC / 155mA
Display / Characters	LED / 21 x 8 characters

Display Modules

Display modules are attached to the front face of the main unit and enable monitoring and adjustment of PLC data services.

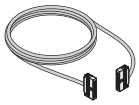


Model Number	FX3G-5DM	FX3U-7DM	FX3U-7DM-HLD	FX1N-5DM	FX-10DM-E
Stocked Item	S	S	S	S	S
Rating	CE (EMC)	CE (EMC)	-	CE (EMC)	CE (EMC)
Applicable PLCs	FX3G	FX3U	FX3U	FX1S	FX1S / FX3U / FX3UC
Display	LCD (with backlight)	LCD (with backlight)	-	LCD (with backlight)	LCD (with backlight)
Resolution	16 characters x 4 lines	16 characters x 4 lines	-	-	2 x 16 characters (80 x 16 pixels)
Power Supply (From Main Unit)	-	5VDC / 20 mA	-	5VDC ±5% / 110 mA	5VDC ±5% / 220 mA
Extension Cable	-	-	Included	-	-
Weight	0.02	0.02	0.01	0.02	0.02
Dimensions W x H x D (mm)	49.4 X 39.4 X12	48 x 35 x 11.5	66.3 x 41.8 x 13	40 x 32 x 17	96 x 62 x 32

Connection Cables

The cables listed in the following tables are used for FX Series PLC programming, positioning applications block connections and interface conversion.

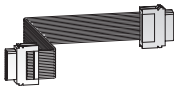
Model Number	F2-RS-5CAB	FX-232CAB-1	SC09	GT09-C30USB-5P
Stocked Item	-	S	S	S
Application	FX2N-1RM to resolver	PC (RS-232) to GOT (RS-232)	PC (RS-232) to PLC (RS-422)	PC (USB) to PLC (Mini USB)
Length (m)	5.0	3.0	3.0	3.0



Connection Cables for FX3UC Remote Terminal Blocks

Model Number	FX-16E-150CAB	FX-16E-300CAB	FX-16E-500CAB	FX-16E-150CAB-R	FX-16E-300CAB-R	FX-16E-500CAB-R	FX-40E-300CAB-R
Stocked Item	S	-	-	S	S	-	S
Application	FX3UC to remote FX terminal block						Connection cable to FX-TB40MIN terminal block used with FX3U-4HC
Length (m)	1.5	3.0	5.0	1.5	3.0	5.0	3.0

Connection Cables for Extension Bus



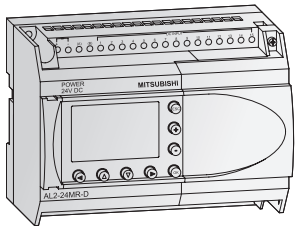
Model Number	FX0N-30EC	FX0N-65EC	FX2N-GM-65EC	FX2N-GM-5EC
Stocked Item	S	S	-	-
Application	PLC bus cable	PLC bus cable	GM bus cable	GM bus cable
Length (m)	0.3	0.65	0.65	0.05

Connection Cables for FX3UC Main Units

Model Number	FX2NC-100MPCB	FX2NC-100BPCB	FX2NC-10BPCB1
Stocked Item	S	-	-
Application	24VDC power cable for main units	24VDC power cable for extension units	Power crossover cable for input extension blocks
Length (m)	1	1	0.01

Sequence Controllers - Alpha2 Series

Controllable I/O: 14 - 28 points
Main Unit I/O: 14/24 points



The Alpha Class

The Alpha2 is a controller designed to address simple control applications at the lower end of the industrial and commercial control markets. With simple analog processing integrated, a straightforward programming style and a built-in display, the Alpha2 is a highly affordable control solution

- Integrated analog processing
- Simple programming style
- Relay and Transistor output options
- Analog input and output options
- High-speed counters up to 1 kHz
- Language support for 7 different languages
- Display area for messages and function block data
- Built-in LCD screen for programming panel or operator interface functions
- Programming with Alpha VLS

Product Details

All-in-one CPU, power supply, display and I/O. Expansion options include expansion boards for communication, high-speed counting or extra I/O.

Programming

Graphical "function block" style programming with drag and drop icons creates an intuitive environment for the user. The programming software also includes a simulation mode to allow off-line program testing without any hardware connected

Full Featured calendar and clock

The Alpha family has a calendar and clock with automatic summer and winter time switching.

Expansion

Four expansion boards are currently available 4 digital 24V DC inputs with two integrated counters, 4 digital 240V AC/DC inputs, 4 relay outputs and 4 transistor outputs.

Applications

The Alpha2 can be fitted to a range of lower end of the industrial and commercial control markets. Typical applications are listed below.

- Lighting control
- Heating ventilation and air conditioning (HVAC)
- Lighting
- Pump controllers
- Building automation
- Alarms and security systems

Alpha Main Units

Model Number		AL2-10MR-A	AL2-10MR-D	AL2-14MR-A	AL2-14MR-D	AL2-24MR-A	AL2-24MR-D
Stocked Item		S	S	S	S	S	S
Rating		UL • cUL • CE (EMC)					
Integrated Inputs/Outputs		10	10	14	14	24	24
Digital Inputs		6	6	8	8	15	15
Analog Inputs		-	6	-	8	-	8
Channels		-	6	-	8	-	8
Integrated Outputs		4	4	6	6	9	9
Max. Power Consumption (W)		4.9	4.0	5.5	7.5	7.0	9.0
Typical Power Consumption	All I/O (W)	3.5 / 1.85 240VAC	2.5/0.75	4.5 / 2.0 240VAC	4.0 / 1.0	5.5 / 2.5 240VAC	5.0 / 1.0
	ON / OFF (W)	3.0 / 1.55 120VAC		3.5 / 1.5 120VAC		4.5 / 2.0 120VAC	
Weight (kg)		0.2	0.2	0.3	0.3	0.35	0.3
Dimensions (W x D x H) mm		71.2 x 90 x 52	71.2 x 90 x 52	124.6 x 90 x 52	124.6 x 90 x 52	124.6 x 90 x 52	124.6 x 90 x 52

Environmental Specifications

General Specifications		Alpha2
Ambient Temperature		Display: -10 to 55°C, Hardware: -25 to 55°C (storage temperature: -30 to +70°C)
Protection Rating		IP20
Noise Immunity		1000 Vpp with noise generator; 1µs at 30 - 100 Hz, tested by noise simulator
Dielectric Withstand Voltage		3750VAC, >1 min. according to EN60730
Allowable Relative Humidity		35 - 85% (no condensation)
Shock Resistance		Complies to IEC 68-2-27: 147 m/s² acceleration, 11 ms 3 x 3 directions
Vibration Resistance	Direct Mounting	Complies to IEC-2-6: 19.6 m/s² acceleration, 80 min. in each direction
	DIN Rail Mounting	Complies to IEC-2-6: 9.8 m/s² acceleration, 80 min. in each direction
Insulation Resistance		500VDC, 7 MΩ Complies to EN60730-1
Ambient Conditions		No corrosive gasses, no dust

Electrical Specifications

Power Supply Specifications		DC Powered Models (AL2-_MR-D)	AC Powered Models (AL2-_MR-A)
Power Supply		24VDC (+20% / -15%)	100-240VAC (+10% / -15%), 50/60 Hz
Inrush Current at ON		7.0A (at 24VDC)	6.5A (at 240VAC)
Allowable Momentary Power Failure Time		5 ms	10 ms
Digital Inputs			
Input Voltage		24VDC (+20% / -15%)	100-240VAC (+10% / -15%), 50/60 Hz
Input Current		Sink: 5.5mA, 24VDC AL2-10MR-D (I01 - I06) AL2-14MR-D/AL2-24MR-D (I01 - I08/ I09 - I15) Source: 6.0mA, 24VDC AL2-10MR-D (I01 - I06) AL2-14MR-D/AL2-24MR-D (I01 - I08) Source: 5.5mA, 24VDC AL2-14MR-D/AL2-24MR-D (I09 - I15)	I01-I08 0.13mA / 120VAC (*1) 0.25mA / 240VAC (*1) I09 - I15 0.15mA / 120VAC (*1) 0.29mA / 240VAC (*1)
Response Time	OFF - ON	10 - 20 ms	35-85 ms, 120VAC 25-55 ms, 240VAC
	ON - OFF	10 - 20 ms	35-85 ms, 120VAC 50-130 ms, 240VAC
Analog Inputs		6 (10MR-D); 8 (14 & 24MR-D)	-
Analog Input Range		0-500	-
Resolution		9 bit, (10 V/500)	-
Conversion Speed		8	-
Input Voltage		0-10VDC	-
Input Impedance		142 ±5%	-
Accuracy		±5% (0.5VDC)	-

Note:

1. Current leakage from sensors connected to the inputs might provide enough current to turn the controller ON. Do not use 2-wire sensors.

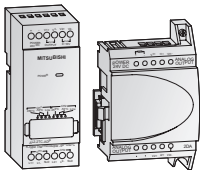
Output Specifications	Alpha2
Type	Relay
Switching Voltage (Max.)	250VAC, 30VDC
Rated Current	10M, 14M: 8A/com 24M (001-004): 8A/com 24M (005-009): 2A/point
Max. Switching Load - Inductive Load	14M, 24M: 249 VA/250VAC, 373 VA/250 24M: 93 VA/125VAC, 93 VA/250VAC
Minimum Load	10mA, 5 V DC
Response Time	<10 ms

Programming Specifications

System Specifications	Alpha2
Programming Method	Function block
Program Capacity	200 function blocks or 5000 bytes
Program Processing	Cyclic processing of the stored program
Number of Available Instructions	38 different function blocks
Program Storage	Integrated EEPROM and optional additional EEPROM cassette
Data Storage	At voltage loss the current status of values, running time meters, and real-time data are stored for up to 20 days (at temperatures of 0 to 25 °C) using capacitors
Processing Time	1 ms + 20µs /logic instruction (complex commands 500/µs instruction)
Real-Time Clock	Seconds, minutes, hours, day of week, month, year (4-digit); accuracy: 5 s / day; automatic daylight savings time adjustment
Program Protection	3 levels using program and keys

Alpha Expansion Options

Expansion/adapter modules significantly increase the range of applications for the Alpha2. (Expansion modules are inserted directly into the Alpha2 and therefore do not take up any further space. The AL-2TC-ADP and AL2-2PT-ADP adapters are connected externally to the AL2.)

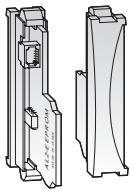


Model Number	Descriptions	Stocked Item	Rating
AL2-4EX*	4 digital inputs (24VDC) with 2 selectable high-speed counter (1kHZ)	S	UL • cUL • CE
AL2-4EX-A2*	4 digital inputs (240VAC)	S	
AL2-4EYR*	4 relay outputs (2A)	-	
AL2-4EYT*	4 transistor outputs (1A)	-	
AL2-2TC-ADP	2 Channel TC Input Adapter Module	S	
AL2-2PT-ADP	2 Channel PT Input Adapter Module	S	
AL2-2DA*	2 Channel Digital to Analog Expansion Module	S	

*AL2 Expansion Cassettes cannot be used with AL2-10M** controllers due to size constraints.

Alpha Memory Cassette

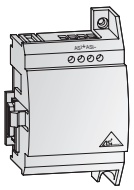
The memory cassette allows the memory cassette to upload and download programs from and to the internal memory of the Alpha2. When the memory cassette is attached to the Alpha2 without uploading or downloading, the program on the memory cassette is executed.



Model Number	AL2-EEPROM-2
Stocked Item	S
Rating	-
Memory Type	EEPROM
Memory Size	5000 bytes
Number of Program Steps	200 function blocks
Non-Volatile Storage	Yes
Write Protection	Yes

Alpha AS-i Interface

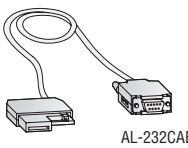
The AL2-ASI-BD in combination with an Alpha2 controller facilitates the data communications via an AS interface system. The AL2-ASI-BD is attached to an Alpha2 series module and forms a slave unit.



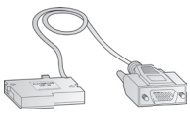
Model Number	AL2-ASI-BD
Stocked Item	S
Rating	UL • cUL • CE (EMC)
Module Type	Slave Module
Number of I/O Points	4 inputs; 4 outputs
External Power Supply	30.5VDC (AS-Interface power supply)
External Current Consumption	Max. 40 mA
Communication Protocol	AS-i standard
Weight	0.5
Dimensions	53.1 x 90 x 24.5

Alpha2 Interface Cables

The AL-232CAB is an RS-232C interface cable. It connects the Alpha2 controller to a personal computer running the programming software for the Alpha2 controller. The AL2-GSM-CAB is an RS-232C interface cable that enables the Alpha2 to connect to a GSM modem or other equipment including personal computer, graphic operator terminal, or other serial devices.



AL-232CAB



AL2-GSM-CAB

Model Number	AL-232CAB	AL2-GSM-CAB
Stocked Item	S	S
Rating	-	-
Connector	9-pin D-SUB female connector	9-pin D-SUB male connector
Application	Alpha2 to PC	GSM modem or other serial communication
Length (m)	2.5	1.5

Note: The above cables cannot be used with the AL2-10MR-series.

Software

GX Works2

GX Works2, as part of iQ Works, is the next generation configuration and programming software for FX, L and iQ Platform / Q Series controllers. Following the goal of maximum efficiency, GX Works2 allows developers to mix and match between five different programming languages, each conforming to a different programming style. Developers can select their preferred language which is best suited for the application. This environment conforms to IEC1131-3 standards, also allowing parts of projects to be saved in Libraries for use within future applications.

Type	Model Number	Description	Stocked Item	Notes
Software	GX-WORKS2-C1	Single User License of GX Works2	S	These are the part numbers to use if a customer wants to purchase the GX Works2 programming software only, without the full iQ Works suite.
	GX-WORKS2-C5	5 User License of GX Works2	S	
	GX-WORKS2-C10	10 User License of GX Works2	-	
	GX-WORKS2-C25	25 User License of GX Works2	-	
	GX-WORKS2-C50	50 User License of GX Works2	-	
	GX-WORKS2-C100	100 User License of GX Works2	-	
	GX-WORKS2-OEM	OEM Site License of GX Works2	-	
SMA	GX-WORKS2-C1-SMA	SMA for GX-Works2-C1	-	These are the part number to order an SMA for the GX Works2 part numbers. Updates will be provided electronically.
	GX-WORKS2-C5-SMA	SMA for GX-Works2-C5	-	
	GX-WORKS2-C10-SMA	SMA for GX-Works2-C10	-	
	GX-WORKS2-C25-SMA	SMA for GX-Works2-C25	-	
	GX-WORKS2-C50-SMA	SMA for GX-Works2-C50	-	
	GX-WORKS2-C100-SMA	SMA for GX-Works2-C100	-	
	GX-WORKS2-OEM-SMA	OEM-SMA Site License of GX Works2	-	

GX Works2 FX

GX Works2 FX is a scaled down version of GX Works2 supporting FX Series PLCs. GX Works2 FX is completely compatible with the full version of GX Works2 making it easy to share programs between the two software packages (limited to FX PLC programs). Customers who already have GX Works2 or iQ Works do not need GX Works2 FX as all the functionality in GX Works2 FX is available in those software products.
FX Configurator-EN, FX Configurator-FP, and helpful function blocks are included on the CD.

Type	Model Number	Description	Stocked Item	Notes
Software	GX-WORKS2-FX-C1	Single User License of GX Works2 FX	S	GX Works2 FX only supports FX Series PLCs. Customers using FX in addition to Q or L Series CPUs should select the full version of GX Works2 or iQ Works. GX Works2 FX does not require an SMA, updates are available for all users for the entire life of the software.
	GX-WORKS2-FX-C5	5 User License of GX Works2 FX	-	
	GX-WORKS2-FX-C10	10 User License of GX Works2 FX	-	
	GX-WORKS2-FX-C25	25 User License of GX Works2 FX	-	
	GX-WORKS2-FX-C50	50 User License of GX Works2 FX	-	
	GX-WORKS2-FX-C100	100 User License of GX Works2 FX	-	
	GX-WORKS2-FX-OEM	OEM Site License of GX Works2 FX	-	

USB and Serial Connection Options

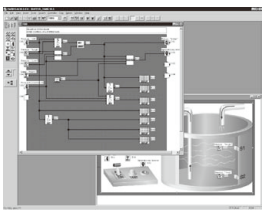
Use the FX-USB-AW (USB option) and/or the GT09-C30USB-5P (USB), SC09 (RS-422), GT01-C30R2-9S (RS-232) cables for programming controllers.

FX PLC Configuration Software

Model Number	Description	Stocked Item	Applicable For
GX-CONFIG-DP-C1	Profibus configuration tool (FX3U-64DP-M) Single User License	S	Windows® 95/98/ME/NT/ 2000/XP/Vista/ Windows® 7 (32bit and 64bit)
GX-CONFIG-DP-C5	Profibus configuration tool (FX3U-64DP-M) 5 User License	-	

Alpha Programming Software

AL-PCS/WIN is the standard programming and documentation software for all Alpha Series controllers and provides an easy to use graphical programming environment. Program elements are placed on the function block diagram with visible wires to connect them and the I/O terminals. Monitoring functions with optional pictures of the use's application in the background are also available.



Model Number	AL-PCS/WIN
Series	Alpha Series
Language	7 languages (English/German/French/Italian/Spanish/Swedish/Russian)
Applicable For	Windows® 95/98/ME/NT/2000/XP/Vista/Windows 7 (32bit and 64bit)